



STIC Search Report

EIC 1700

STIC Database | Tracking Number: 10728334

TO: Satya Sastri
Location: REM10A30
Art Unit : 1713
October 3, 2005

Case Serial Number: 10728334

From: Mei Huang
Location: EIC 1700
REMSEN 4B28
Phone: 571/272-3952
Mei.huang@uspto.gov

Search Notes

Examiner Sastri,

- 14 answers from the search based on all four components, A+B+C+D, using the polymer class terms and text;
- 29 answers from the search based on three components, A+B+D.

If you have any questions or if you would like to refine the search query, please feel free to contact me.

Thank you for using STIC services!

Mei Huang
Patent Information Researcher
REM-4B31
571-272-3952

=> fil reg
FILE 'REGISTRY' ENTERED AT 13:29:31 ON 03 OCT 2005
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STRUCTURE FILE UPDATES: 2 OCT 2005 HIGHEST RN 864354-42-7
DICTIONARY FILE UPDATES: 2 OCT 2005 HIGHEST RN 864354-42-7

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TSCA INFORMATION NOW CURRENT THROUGH JULY 14, 2005

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*
* The CA roles and document type information have been removed from *
* the IDE default display format and the ED field has been added, *
* effective March 20, 2005. A new display format, IDERL, is now *
* available and contains the CA role and document type information. *
*

Structure search iteration limits have been increased. See HELP SLIMITS
for details.

Experimental and calculated property data are now available. For more
information enter HELP PROP at an arrow prompt in the file or refer
to the file summary sheet on the web at:
<http://www.cas.org/ONLINE/DBSS/registryss.html>

=> fil hcap
FILE 'HCAPLUS' ENTERED AT 13:29:36 ON 03 OCT 2005
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FILE COVERS 1907 - 3 Oct 2005 VOL 143 ISS 15
FILE LAST UPDATED: 2 Oct 2005 (20051002/ED)

=> d his

(FILE 'HOME' ENTERED AT 10:54:54 ON 03 OCT 2005)

FILE 'REGISTRY' ENTERED AT 10:56:40 ON 03 OCT 2005
L1 STR 139189-30-3
L2 0 S L1
L3 2 S L1 FUL

FILE 'HCAPLUS' ENTERED AT 11:00:15 ON 03 OCT 2005
L4 690 S L3

FILE 'REGISTRY' ENTERED AT 11:01:30 ON 03 OCT 2005
SAV L3 SSASTRI334/A

FILE 'HCAPLUS' ENTERED AT 11:02:03 ON 03 OCT 2005
S L4 AND PACR/PCT

FILE 'REGISTRY' ENTERED AT 11:07:11 ON 03 OCT 2005
L5 312681 S PACR/PCT

FILE 'HCAPLUS' ENTERED AT 11:07:12 ON 03 OCT 2005

FILE 'REGISTRY' ENTERED AT 11:08:04 ON 03 OCT 2005
L6 188000 S PES/PCT
L7 16145 S PR/PCT
L8 0 S L3 AND L6
L9 0 S L3 AND L7
L10 0 S L3 AND L5

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FILE 'REGISTRY' ENTERED AT 11:18:54 ON 03 OCT 2005
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L13 0 S SAM L1 SUB=L7
L14 0 S FUL L1 SUB=L7
L15 0 S SAM L1 SUB=L5
L16 0 S FUL L1 SUB=L5

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FILE 'REGISTRY' ENTERED AT 11:38:20 ON 03 OCT 2005
L17 312681 S L5 OR L5
L18 162682 S L17 RAN=(,160713-42-8)
L19 149999 S L17 NOT L18
L20 0 S 139189-30-3/CRN

FILE 'STNGUIDE' ENTERED AT 11:44:34 ON 03 OCT 2005

FILE 'HCAPLUS' ENTERED AT 11:56:04 ON 03 OCT 2005
L21 255 S L3 AND L6
L22 72 S L3 AND L7
L23 313 S L3 AND (L18 OR L19)
L24 7 S L21 AND L22 AND L23

L25 E US20040186208/PN
1 S E3
L26 0 S L25 AND L24

FILE 'STNGUIDE' ENTERED AT 12:09:21 ON 03 OCT 2005

FILE 'HCAPLUS' ENTERED AT 12:12:06 ON 03 OCT 2005
L27 0 S L20

FILE 'STNGUIDE' ENTERED AT 12:18:29 ON 03 OCT 2005

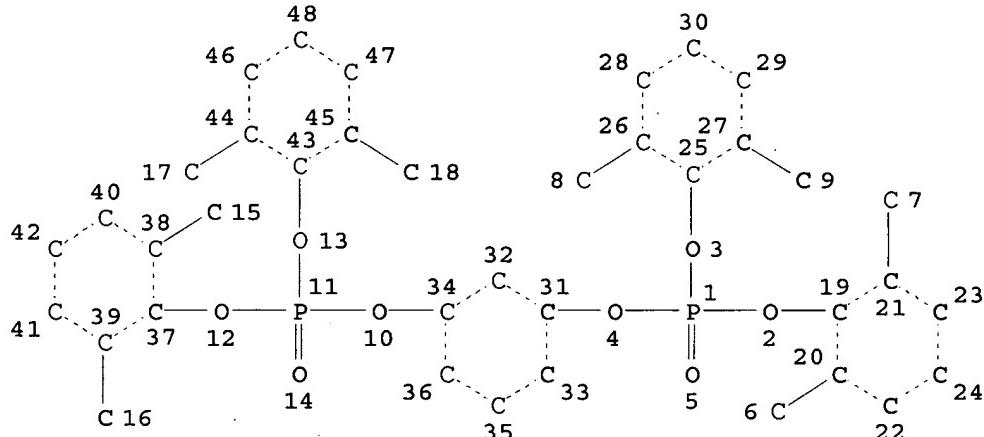
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L28 116 S L21 AND L23 AND (FIRE? OR FLAME? OR IGNIT?)
L29 0 S L25 AND L28
L30 0 S L25 AND 21
L31 1 S L25 AND L21
L32 0 S L25 AND L22
L33 110 S L28 AND COMPOSITION?
L34 108 S L33 AND ?RESIST?
L35 126 S L21 AND L23
L36 12495 S 35 (L) (FIRE? OR FLAME? OR IGNIT?)
L37 116 S L35 (L) (FIRE? OR FLAME? OR IGNIT?)
L38 1 S L34 AND LASER?
L39 59 S L34 AND POLYESTER
SAV L24 SSASTRI24/A
SAV L39 SSASTRI39/A
L40 25 S L28 AND HALOGEN-FREE
L41 27 S L28 AND HALO?-FREE
L42 22 S L41 NOT L24
L43 29 S L24 OR L41
L44 320197 S POLYESTER?
L45 79836 S PHENOL? (W) (?POLYMER? OR RESIN?)
L46 173947 S ACRYL? (W) (?POLYMER? OR RESIN?)
L47 8 S L3 AND L44 AND L45 AND L46
L48 1 S L25 AND L47
L49 14 S L24 OR L47
L50 35 S L49 OR L43
SET COST OFF

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This file contains CAS Registry Numbers for easy and accurate substance identification.

=> d que 150

L1 STR



NODE ATTRIBUTES:

DEFAULT MLEVEL IS ATOM

DEFAULT ECLEVEL IS LIMITED

GRAPH ATTRIBUTES:

RING(S) ARE ISOLATED OR EMBEDDED

NUMBER OF NODES IS 48

STEREO ATTRIBUTES: NONE

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L3      2 SEA FILE=REGISTRY SSS FUL L1
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L6      188000 SEA FILE=REGISTRY PES/PCT
L7      16145 SEA FILE=REGISTRY PR/PCT
L17     312681 SEA FILE=REGISTRY L5. OR L5
L18     162682 SEA FILE=REGISTRY RAN=(,160713-42-8) L5 OR L5
L19     149999 SEA FILE=REGISTRY L17 NOT L18
L21     255 SEA FILE=HCAPLUS L3 AND L6
L22     72 SEA FILE=HCAPLUS L3 AND L7
L23     313 SEA FILE=HCAPLUS L3 AND (L18 OR L19)
L24     7 SEA FILE=HCAPLUS L21 AND L22 AND L23
L28     116 SEA FILE=HCAPLUS L21 AND L23 AND (FIRE? OR FLAME? OR
          IGNIT?)
L41     27 SEA FILE=HCAPLUS L28 AND HALO?-FREE
L43     29 SEA FILE=HCAPLUS L24 OR L41
L44     320197 SEA FILE=HCAPLUS POLYESTER?
L45     79836 SEA FILE=HCAPLUS PHENOL?(W) (?POLYMER? OR RESIN?)
L46     173947 SEA FILE=HCAPLUS ACRYL? (W) (?POLYMER? OR RESIN?)
L47     8 SEA FILE=HCAPLUS L3 AND L44 AND L45 AND L46
L49     14 SEA FILE=HCAPLUS L24 OR L47
L50     35 SEA FILE=HCAPLUS L49 OR L43

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=> d 150 bib abs ind hitstr 1-35

L50 ANSWER 1 OF 35 HCPLUS COPYRIGHT 2005 ACS on STN
 AN 2005:545699 HCPLUS
 DN 143:60776
 TI Fire-resistant resin compositions with good processing stability
 IN Harashina, Hatsuhiko
 PA Polyplastics Co., Ltd., Japan
 SO Jpn. Kokai Tokkyo Koho, 36 pp.
 CODEN: JKXXAF
 DT Patent
 LA Japanese
 FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 2005162912	A2	20050623	JP 2003-405245	200312 03

PRAI JP 2003-405245 20031203
 AB Title compns. comprise (A) base resins, (B) alumina hydrate Al₂O₃·nH₂O, and (C) auxiliary flame retardants. Thus, a compn. comprising Duracon M 90-44 100, boehmite 5, Nova Excel 140 10, PR 53647 (phenolic resin) 20, and polytetrafluoroethylene 0.5 parts showed flame retardancy V-0.
 IC ICM C08L101-00
 ICS C08K003-02; C08K003-22; C08K003-38; C08K005-3492; C08K005-42;
 C08K005-52; C08K005-5415; C08L067-02
 CC 37-6 (Plastics Manufacture and Processing)
 Section cross-reference(s): 38
 ST fire resistant resin compn processing stability; Duracon boehmite phenolic resin polytetrafluoroethylene compn
 IT Amides, uses
 Phosphates, uses
 RL: MOA (Modifier or additive use); USES (Uses)
 (amidophosphates, auxiliary flame retardant; fire-resistant resin compns. with good processing stability)
 IT Polyphosphoric acids
 RL: MOA (Modifier or additive use); USES (Uses)
 (ammonium salts, Terraju C 70, auxiliary flame retardant;
 fire-resistant resin compns. with good processing stability)
 IT Polyamides, uses
 Polyesters, uses
 RL: MOA (Modifier or additive use); USES (Uses)
 (arom., auxiliary flame retardant; fire-resistant resin compns.
 with good processing stability)
 IT Epoxy resins, uses
 Oxides (inorganic), uses
 Phenolic resins, uses
 Phosphates, uses
 Polycarbonates, uses
 Polyoxyphenylenes
 Polysiloxanes, uses
 Polythiophenylenes
 Zeolites (synthetic), uses

IT RL: MOA (Modifier or additive use); USES (Uses)
 (auxiliary flame retardant; fire-resistant resin compns. with
 good processing stability)

IT Pollyphosphates
 RL: MOA (Modifier or additive use); USES (Uses)
 (derivs., auxiliary flame retardant; fire-resistant resin compns.
 with good processing stability)

IT Phenolic resins, uses
 RL: MOA (Modifier or additive use); USES (Uses)
 (epoxy, novolak, auxiliary flame retardant; fire-resistant resin
 compns. with good processing stability)

IT Fire-resistant materials
 Fireproofing agents
 (fire-resistant resin compns. with good processing stability)

IT Polyesters, properties
 Polyoxymethylenes, properties
 RL: POF (Polymer in formulation); PRP (Properties); TEM (Technical
 or engineered material use); USES (Uses)
 (fire-resistant resin compns. with good processing stability)

IT Molded plastics, properties
 RL: PRP (Properties); TEM (Technical or engineered material use);
 USES (Uses)
 (fire-resistant resin compns. with good processing stability)

IT Polymer blends
 RL: TEM (Technical or engineered material use); USES (Uses)
 (fire-resistant resin compns. with good processing stability)

IT Phosphates, uses
 RL: MOA (Modifier or additive use); USES (Uses)
 (hydrogen, alk. earth metal, auxiliary flame retardant;
 fire-resistant resin compns. with good processing stability)

IT Borates
 Phosphites
 RL: MOA (Modifier or additive use); USES (Uses)
 (metal, auxiliary flame retardant; fire-resistant resin compns.
 with good processing stability)

IT Phenolic resins, uses
 RL: MOA (Modifier or additive use); USES (Uses)
 (novolak, auxiliary flame retardant; fire-resistant resin compns.
 with good processing stability)

IT Epoxy resins, uses
 RL: MOA (Modifier or additive use); USES (Uses)
 (phenolic, novolak, auxiliary flame retardant; fire-resistant
 resin compns. with good processing stability)

IT Cyclophosphazenes
 RL: MOA (Modifier or additive use); USES (Uses)
 (phenoxy, auxiliary flame retardant; fire-resistant resin compns.
 with good processing stability)

IT Sulfonic acids, uses
 RL: MOA (Modifier or additive use); USES (Uses)
 (salts, auxiliary flame retardant; fire-resistant resin compns.
 with good processing stability)

IT Group IVA element compounds
 RL: MOA (Modifier or additive use); USES (Uses)
 (stannates, auxiliary flame retardant; fire-resistant resin
 compns. with good processing stability)

IT 1318-23-6, BMT

RL: MOA (Modifier or additive use); USES (Uses)
 (BMT, BMF, flame retardant; fire-resistant resin compns. with
 good processing stability)

IT 25037-45-0 25134-01-4
 RL: MOA (Modifier or additive use); USES (Uses)
 (assumed monomers, auxiliary flame retardant; fire-resistant
 resin compns. with good processing stability)

IT 26062-94-2 26590-75-0, Polytrimethylene
 terephthalate
 RL: POF (Polymer in formulation); PRP (Properties); TEM (Technical
 or engineered material use); USES (Uses)
 (assumed monomers; fire-resistant resin compns. with good
 processing stability)

IT 108-78-1D, Melamine, polyphosphate derivs. 1502-47-2, Melem
 3576-88-3D, Melam, polyphosphate derivs. 22535-90-6, CTU Guanamine
 24936-68-3, Panlite L 1225, uses 24938-67-8, YPX 100F
 26590-50-1, U 100 26834-02-6, Milex XL 225 31870-48-1,
 CR 741 37640-57-6, MC 610 70785-76-1 81775-74-8, EPPN
 201 84962-53-8, Apinon 901 113504-81-7 117313-45-8, Epikote
 1004K 139189-30-3, PX 200 147263-99-8, PX 202
 172827-17-7, Sumilite PR 53647 176316-86-2, Aluminum
 ethylmethylphosphinate 243144-78-7, PMP 100 364728-71-2, MMS 200
 440088-13-1
 RL: MOA (Modifier or additive use); USES (Uses)
 (auxiliary flame retardant; fire-resistant resin compns. with
 good processing stability)

IT 380366-74-5, PMP 200
 RL: MOA (Modifier or additive use); USES (Uses)
 (fire-resistant resin compns. with good processing stability)

IT 9003-53-6, Toyo Styrol G 19 9003-54-7, Cevian N
 24968-12-5, Duranex 25038-59-9, Bellpet EFG 10,
 properties 26546-03-2, Polytrimethylene terephthalate
 126730-46-9, Duracon M 90-44
 RL: POF (Polymer in formulation); PRP (Properties); TEM (Technical
 or engineered material use); USES (Uses)
 (fire-resistant resin compns. with good processing stability)

IT 1333-84-2, Alumina hydrate 1336-21-6D, Ammonium hydroxide,
 hydrated, composite with boehmite 1344-28-1, BMM, uses
 24623-77-6, BMI (oxide) 63957-70-0D, Boehmite, composite with
 hydrated ammonium hydroxide
 RL: MOA (Modifier or additive use); USES (Uses)
 (flame retardant; fire-resistant resin compns. with good
 processing stability)

IT 7723-14-0, Nova Excel 140, uses
 RL: MOA (Modifier or additive use); USES (Uses)
 (red, auxiliary flame retardant; fire-resistant resin compns.
 with good processing stability)

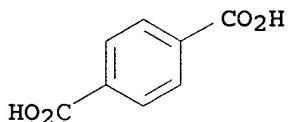
IT 26062-94-2 26590-75-0, Polytrimethylene
 terephthalate
 RL: POF (Polymer in formulation); PRP (Properties); TEM (Technical
 or engineered material use); USES (Uses)
 (assumed monomers; fire-resistant resin compns. with good
 processing stability)

RN 26062-94-2 HCPLUS
 CN 1,4-Benzenedicarboxylic acid, polymer with 1,4-butanediol (9CI) (CA
 INDEX NAME)

CM 1

CRN 110-63-4
CMF C4 H10 O2HO—(CH₂)₄—OH

CM 2

CRN 100-21-0
CMF C8 H6 O4

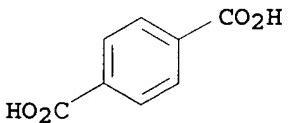
RN 26590-75-0 HCPLUS

CN 1,4-Benzenediacrylic acid, polymer with 1,3-propanediol (9CI)
(CA INDEX NAME)

CM 1

CRN 504-63-2
CMF C3 H8 O2HO—CH₂—CH₂—CH₂—OH

CM 2

CRN 100-21-0
CMF C8 H6 O4IT 26590-50-1, U 100 81775-74-8, EPPN 201
139189-30-3, PX 200RL: MOA (Modifier or additive use); USES (Uses)
(auxiliary flame retardant; fire-resistant resin compns. with
good processing stability)

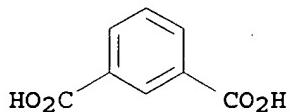
RN 26590-50-1 HCAPLUS

CN 1,3-Benzenedicarboxylic acid, polymer with 1,4-benzenedicarboxylic acid and 4,4'-(1-methylethylidene)bis[phenol] (9CI) (CA INDEX NAME)

CM 1

CRN 121-91-5

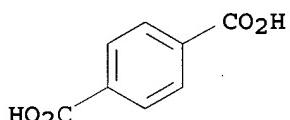
CMF C8 H6 O4



CM 2

CRN 100-21-0

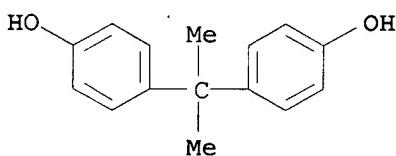
CMF C8 H6 O4



CM 3

CRN 80-05-7

CMF C15 H16 O2



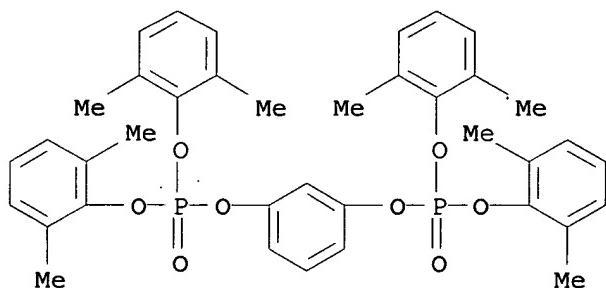
RN 81775-74-8 HCAPLUS

CN EPPN 201 (9CI) (CA INDEX NAME)

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***

RN 139189-30-3 HCAPLUS

CN Phosphoric acid, 1,3-phenylene tetrakis(2,6-dimethylphenyl) ester (9CI) (CA INDEX NAME)

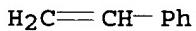


IT 9003-54-7, Cevian N 24968-12-5, Duranex
 25038-59-9, Bellpet EFG 10, properties 26546-03-2,
 Polytrimethylene terephthalate
 RL: POF (Polymer in formulation); PRP (Properties); TEM (Technical
 or engineered material use); USES (Uses)
 (fire-resistant resin compns. with good processing stability)
 RN 9003-54-7 HCPLUS
 CN 2-Propenenitrile, polymer with ethenylbenzene (9CI) (CA INDEX NAME)

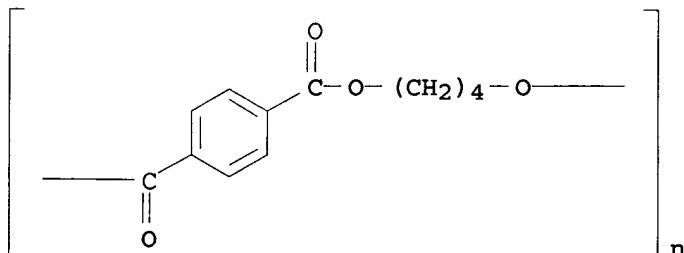
CM 1

CRN 107-13-1
CMF C3 H3 N

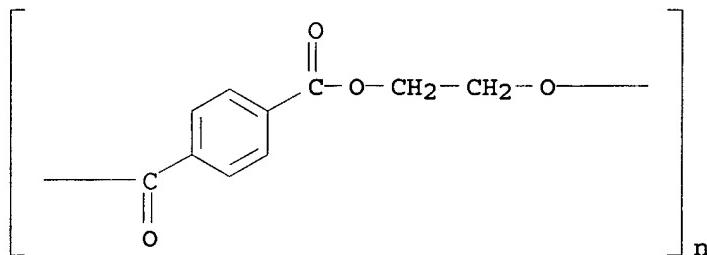
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CRN 100-42-5
CMF C8 H8

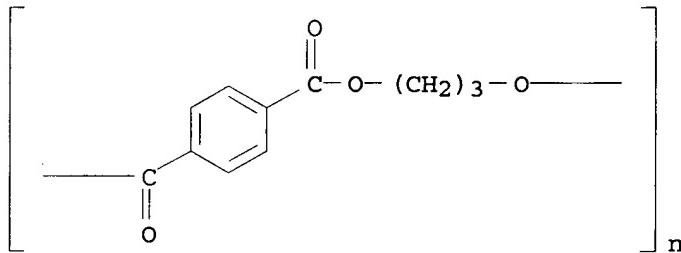
RN 24968-12-5 HCPLUS
 CN Poly(oxy-1,4-butanediylloxycarbonyl-1,4-phenylene carbonyl) (9CI) (CA
 INDEX NAME)



RN 25038-59-9 HCAPLUS
 CN Poly(oxy-1,2-ethanediylloxycarbonyl-1,4-phenylene carbonyl) (9CI) (CA INDEX NAME)



RN 26546-03-2 HCAPLUS
 CN Poly(oxy-1,3-propanediylloxycarbonyl-1,4-phenylene carbonyl) (9CI) (CA INDEX NAME)



L50 ANSWER 2 OF 35 HCAPLUS COPYRIGHT 2005 ACS on STN
 AN 2005:33374 HCAPLUS
 DN 142:115514
 TI Halogen-free composite laminated boards with low thermal expansion
 IN Okumura, Hiroya; Takeuchi, Hiroshi; Hirata, Isao; Nozue, Akiyoshi
 PA Japan Composite Co., Ltd., Japan; Matsushita Electric Works, Ltd.
 SO Jpn. Kokai Tokkyo Koho, 16 pp.

CODEN: JKXXAF

DT Patent

LA Japanese

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 2005007783	A2	20050113	JP 2003-175905	200306 20

PRAI JP 2003-175905 20030620

OS MARPAT 142:115514

AB The laminated boards are prep'd. by curing fiber-reinforced laminates of glass (non)woven fabrics impregnated with thermosetting resin

compns. comprising **halogen-free** radically polymerizable resins (a), thermoplastic resins (b), radically polymerizable monomers (c), **fireproofing** agents (d), and inorg. fillers (e) in amts. of (a) 10-75, (b) 2-30, (c) 20-60, and (d) 3-50 parts/100 parts (a) + (b) + (c), and that of (e) 20-80 parts/100 parts (a) + (b) + (c) for impregnation into woven fabrics and 120-300 parts/100 parts (a) + (b) + (c) for impregnation into nonwoven fabrics. Metal-clad laminates of the composite laminated boards for elec. are also claimed. Thus, a compn. of vinyl ester resin (YD 128 methacrylate) 60, unsatd. polyester (prepd. from maleic anhydride 391, propylene glycol 141, and styrene 649 g) 20, styrene 5, and an adipic acid-propylene glycol-ethylene glycol copolymer 15% was mixed with 25% PX 200 (phosphate ester), cumene hydroperoxide, and 40% (compd. 1) or 170% (compd. 2) Al(OH)₃ (CL 310). WE 18K-BS (glass fiber woven fabric) impregnated with compd. 1, 3 layers of Ep 4060 (glass fiber nonwoven fabric) impregnated with compd. 2, and WE 18K-BS impregnated with compd. 1 were laminated in this order, sandwiched with Cu foils (TSTO), and hot-pressed to give a Cu-clad laminate showing H₂O absorption 0.30%, linear expansion coeff. 18 ppm/°C, UL-94 **fire** resistance rating V0, and good soldering resistance.

- IC ICM B32B017-04
 ICS C08J005-04; C08K003-22; C08L085-02; C08L101-00; H05K001-03
 CC 38-3 (Plastics Fabrication and Uses)
 Section cross-reference(s): 76
 ST polyester blend thermosetting resin glass fabric laminate dimensional stability; copper clad laminate unsatd polyester vinyl ester resin; **fire** resistance nonhalogen composite laminate; water resistance copper clad laminate
 IT Glass fiber fabrics
 RL: PRP (Properties); TEM (Technical or engineered material use); USES (Uses)
 (WE 18K-BS, Ep 4060, woven and nonwoven; **halogen-free** composite laminated boards with low thermal expansion)
 IT Polyethers, uses
 RL: IMF (Industrial manufacture); POF (Polymer in formulation); PRP (Properties); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
 (acrylic-epoxy-polyester-; **halogen-free** composite laminated boards with low thermal expansion)
 IT Polyesters, uses
 RL: IMF (Industrial manufacture); POF (Polymer in formulation); PRP (Properties); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
 (acrylic-epoxy-polyether-; **halogen-free** composite laminated boards with low thermal expansion)
 IT Epoxy resins, uses
 RL: IMF (Industrial manufacture); POF (Polymer in formulation); PRP (Properties); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
 (acrylic-polyester-; **halogen-free** composite laminated boards with low thermal expansion)
 IT Epoxy resins, uses
 RL: IMF (Industrial manufacture); POF (Polymer in formulation); PRP (Properties); TEM (Technical or engineered material use); PREP

(Preparation); USES (Uses)
 (acrylic-polyester-polyether-; halogen-free
 composite laminated boards with low thermal expansion)

IT Nitrile rubber, uses
 RL: POF (Polymer in formulation); TEM (Technical or engineered material use); USES (Uses)
 (carboxy-terminated, CTBN 1300X8; halogen-free
 composite laminated boards with low thermal expansion)

IT Printed circuit boards
 (copper-clad laminates; halogen-free
 composite laminated boards with low thermal expansion)

IT Reinforced plastics
 RL: PRP (Properties); TEM (Technical or engineered material use);
 USES (Uses)
 (glass fiber-reinforced; halogen-free
 composite laminated boards with low thermal expansion)

IT Fire-resistant materials
 Fireproofing agents
 (halogen-free composite laminated boards with
 low thermal expansion)

IT Polyesters, uses
 RL: IMF (Industrial manufacture); POF (Polymer in formulation); PRP
 (Properties); TEM (Technical or engineered material use); PREP
 (Preparation); USES (Uses)
 (halogen-free composite laminated boards with
 low thermal expansion)

IT Laminated plastics, uses
 RL: PRP (Properties); TEM (Technical or engineered material use);
 USES (Uses)
 (halogen-free composite laminated boards with
 low thermal expansion)

IT 21645-51-2, CL 310, uses
 RL: MOA (Modifier or additive use); USES (Uses)
 (filler; halogen-free composite laminated
 boards with low thermal expansion)

IT 139189-30-3, PX 200
 RL: MOA (Modifier or additive use); USES (Uses)
 (fireproofing agent; halogen-free
 composite laminated boards with low thermal expansion)

IT 7440-50-8, TSTO, uses
 RL: TEM (Technical or engineered material use); USES (Uses)
 (foils, laminates; halogen-free composite
 laminated boards with low thermal expansion)

IT 26523-14-8P, Adipic acid-ethylene glycol-propylene glycol
 copolymer 52007-86-0P, Azelaic acid-ethylene
 glycol-neopentyl glycol-terephthalic acid copolymer
 64253-34-5P, Azelaic acid-ethylene glycycol-isophthalic
 acid-neopentyl glycol-terephthalic acid copolymer
 103413-65-6P, Maleic anhydride-propylene glycol-styrene-YD
 128 methacrylate copolymer 820234-06-8P, Dipropylene
 glycol-maleic anhydride-propylene glycol-styrene-YD 128 methacrylate
 copolymer 820234-07-9P, Dipropylene glycol-maleic
 anhydride-propylene glycol-styrene-YD 128 methacrylate-YD 901
 methacrylate copolymer 820234-08-0P, Maleic
 anhydride-propylene glycol-styrene-YD 128 methacrylate-YD 901
 methacrylate copolymer

RL: IMF (Industrial manufacture); POF (Polymer in formulation); PRP (Properties); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)

(halogen-free composite laminated boards with low thermal expansion)

IT 144820-12-2P, Allyl methacrylate-butyl acrylate-1,4-butylene glycol diacrylate-ethyl acrylate-2-hydroxyethyl methacrylate-methyl methacrylate graft copolymer

RL: IMF (Industrial manufacture); MOA (Modifier or additive use); PREP (Preparation); USES (Uses)

(multilayer, particles; halogen-free composite laminated boards with low thermal expansion)

IT 9003-18-3D, carboxy-terminated
RL: POF (Polymer in formulation); TEM (Technical or engineered material use); USES (Uses)

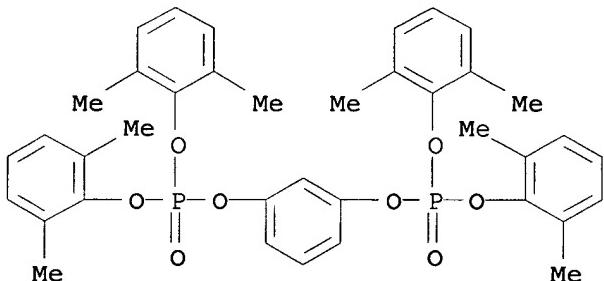
(nitrile rubber, CTBN 1300X8; halogen-free composite laminated boards with low thermal expansion)

IT 139189-30-3, PX 200
RL: MOA (Modifier or additive use); USES (Uses)

(fireproofing agent; halogen-free composite laminated boards with low thermal expansion)

RN 139189-30-3 HCPLUS

CN Phosphoric acid, 1,3-phenylene tetrakis(2,6-dimethylphenyl) ester (9CI) (CA INDEX NAME)



IT 26523-14-8P, Adipic acid-ethylene glycol-propylene glycol copolymer 52007-86-0P, Azelaic acid-ethylene glycol-neopentyl glycol-terephthalic acid copolymer 64253-34-5P, Azelaic acid-ethylene glycol-isophthalic acid-neopentyl glycol-terephthalic acid copolymer 103413-65-6P, Maleic anhydride-propylene glycol-styrene-YD 128 methacrylate copolymer 820234-06-8P, Dipropylene glycol-maleic anhydride-propylene glycol-styrene-YD 128 methacrylate copolymer 820234-07-9P, Dipropylene glycol-maleic anhydride-propylene glycol-styrene-YD 128 methacrylate-YD 901 methacrylate copolymer 820234-08-0P, Maleic anhydride-propylene glycol-styrene-YD 128 methacrylate-YD 901 methacrylate copolymer

RL: IMF (Industrial manufacture); POF (Polymer in formulation); PRP (Properties); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)

(halogen-free composite laminated boards with low thermal expansion)

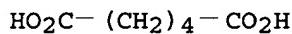
RN 26523-14-8 HCAPLUS

CN Hexanedioic acid, polymer with 1,2-ethanediol and 1,2-propanediol
(9CI) (CA INDEX NAME)

CM 1

CRN 124-04-9

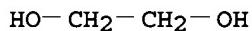
CMF C6 H10 O4



CM 2

CRN 107-21-1

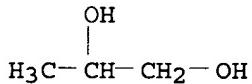
CMF C2 H6 O2



CM 3

CRN 57-55-6

CMF C3 H8 O2



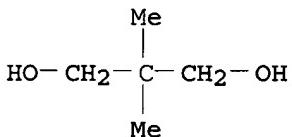
RN 52007-86-0 HCAPLUS

CN 1,4-Benzenedicarboxylic acid, polymer with 2,2-dimethyl-1,3-propanediol, 1,2-ethanediol and nonanedioic acid (9CI) (CA INDEX NAME)

CM 1

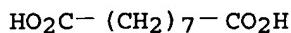
CRN 126-30-7

CMF C5 H12 O2



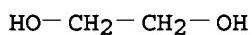
CM 2

CRN 123-99-9
 CMF C9 H16 O4



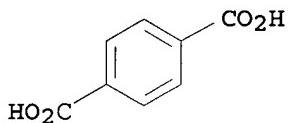
CM 3

CRN 107-21-1
 CMF C2 H6 O2



CM 4

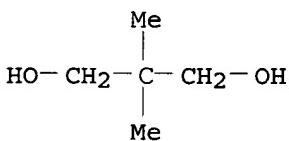
CRN 100-21-0
 CMF C8 H6 O4



RN 64253-34-5 HCPLUS
 CN 1,3-Benzenedicarboxylic acid, polymer with 1,4-benzenedicarboxylic acid, 2,2-dimethyl-1,3-propanediol, 1,2-ethanediol and nonanedioic acid (9CI) (CA INDEX NAME)

CM 1

CRN 126-30-7
 CMF C5 H12 O2



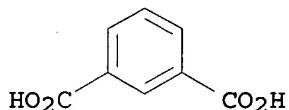
CM 2

CRN 123-99-9
 CMF C9 H16 O4



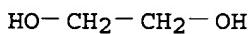
CM 3

CRN 121-91-5
CMF C8 H6 O4



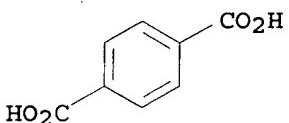
CM 4

CRN 107-21-1
CMF C2 H6 O2



CM 5

CRN 100-21-0
CMF C8 H6 O4

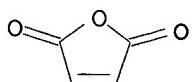


RN 103413-65-6 HCPLUS

CN 2,5-Furandione, polymer with ethenylbenzene, 4,4'-(1-methylethylidene)bis[phenol] polymer with (chloromethyl)oxirane 2-methyl-2-propenoate, and 1,2-propanediol (9CI) (CA INDEX NAME)

CM 1

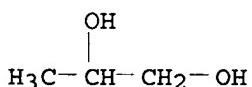
CRN 108-31-6
CMF C4 H2 O3



CM 2

CRN 100-42-5
CMF C8 H8

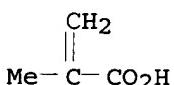
CM 3

CRN 57-55-6
CMF C3 H8 O2

CM 4

CRN 61970-25-0
CMF (C15 H16 O2 . C3 H5 Cl O)x . x C4 H6 O2

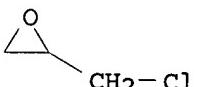
CM 5

CRN 79-41-4
CMF C4 H6 O2

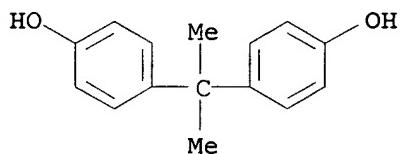
CM 6

CRN 25068-38-6
CMF (C15 H16 O2 . C3 H5 Cl O)x
CCI PMS

CM 7

CRN 106-89-8
CMF C3 H5 Cl O

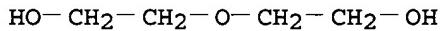
CM 8

CRN 80-05-7
CMF C15 H16 O2

RN 820234-06-8 HCPLUS

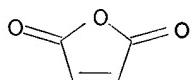
CN 2,5-Furandione, polymer with (chloromethyl)oxirane polymer with
4,4'-(1-methylethylidene)bis[phenol] 2-methyl-2-propenoate,
ethenylbenzene, oxybis[propanol] and 1,2-propanediol (9CI) (CA
INDEX NAME)

CM 1

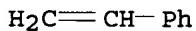
CRN 25265-71-8
CMF C6 H14 O3
CCI IDS

2 (D1-Me)

CM 2

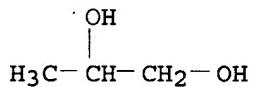
CRN 108-31-6
CMF C4 H2 O3

CM 3

CRN 100-42-5
CMF C8 H8

CM 4

CRN 57-55-6
 CMF C3 H8 O2

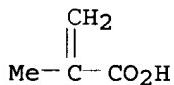


CM 5

CRN 61970-25-0
 CMF (C15 H16 O2 . C3 H5 Cl O)x . x C4 H6 O2

CM 6

CRN 79-41-4
 CMF C4 H6 O2

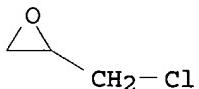


CM 7

CRN 25068-38-6
 CMF (C15 H16 O2 . C3 H5 Cl O)x
 CCI PMS

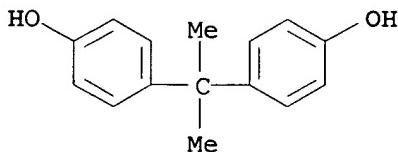
CM 8

CRN 106-89-8
 CMF C3 H5 Cl O



CM 9

CRN 80-05-7
 CMF C15 H16 O2



RN 820234-07-9 HCPLUS

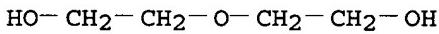
CN 2,5-Furandione, polymer with (chloromethyl)oxirane polymer with 4,4'-(1-methylethylidene)bis[phenol] 2-methyl-2-propenoate, ethenylbenzene, 2,2'-[(1-methylethylidene)bis(4,1-phenyleneoxymethylene)]bis[oxirane] homopolymer 2-methyl-2-propenoate, oxybis[propanol] and 1,2-propanediol (9CI) (CA INDEX NAME)

CM 1

CRN 25265-71-8

CMF C6 H14 O3

CCI IDS



2 (D1-Me)

CM 2

CRN 108-31-6

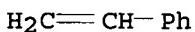
CMF C4 H2 O3



CM 3

CRN 100-42-5

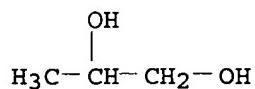
CMF C8 H8



CM 4

CRN 57-55-6

CMF C3 H8 O2

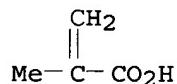


CM 5

CRN 61970-25-0
 CMF (C15 H16 O2 . C3 H5 Cl O)x . x C4 H6 O2

CM 6

CRN 79-41-4
 CMF C4 H6 O2

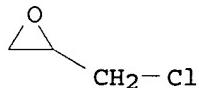


CM 7

CRN 25068-38-6
 CMF (C15 H16 O2 . C3 H5 Cl O)x
 CCI PMS

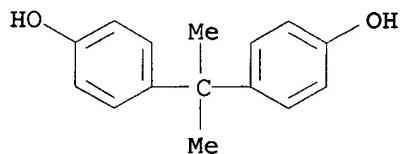
CM 8

CRN 106-89-8
 CMF C3 H5 Cl O



CM 9

CRN 80-05-7
 CMF C15 H16 O2

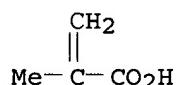


CM 10

CRN 39290-46-5
 CMF (C₂₁ H₂₄ O₄)_x . x C₄ H₆ O₂

CM 11

CRN 79-41-4
 CMF C₄ H₆ O₂

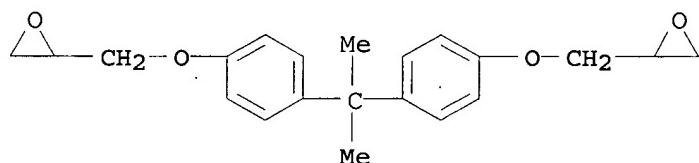


CM 12

CRN 25085-99-8
 CMF (C₂₁ H₂₄ O₄)_x
 CCI PMS

CM 13

CRN 1675-54-3
 CMF C₂₁ H₂₄ O₄

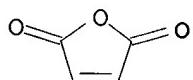


RN 820234-08-0 HCPLUS

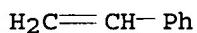
CN 2,5-Furandione, polymer with (chloromethyl)oxirane polymer with 4,4'-(1-methylethylidene)bis[phenol] 2-methyl-2-propenoate, ethenylbenzene, 2,2'-[{(1-methylethylidene)bis(4,1-phenyleneoxyethylene)}bis[oxirane]]homopolymer 2-methyl-2-propenoate and 1,2-propanediol (9CI) (CA INDEX NAME)

CM 1

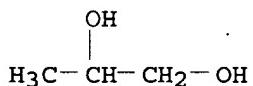
CRN 108-31-6
 CMF C₄ H₂ O₃



CM 2

CRN 100-42-5
CMF C8 H8

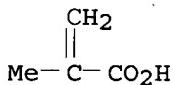
CM 3

CRN 57-55-6
CMF C3 H8 O2

CM 4

CRN 61970-25-0
CMF (C15 H16 O2 . C3 H5 Cl O)x . x C4 H6 O2

CM 5

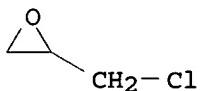
CRN 79-41-4
CMF C4 H6 O2

CM 6

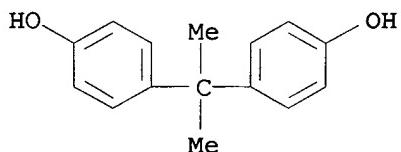
CRN 25068-38-6
CMF (C15 H16 O2 . C3 H5 Cl O)x
CCI PMS

CM 7

CRN 106-89-8
CMF C3 H5 Cl O



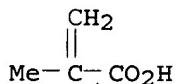
CM 8

CRN 80-05-7
CMF C15 H16 O2

CM 9

CRN 39290-46-5
CMF (C₂₁ H₂₄ O₄)_x . x C₄ H₆ O₂

CM 10

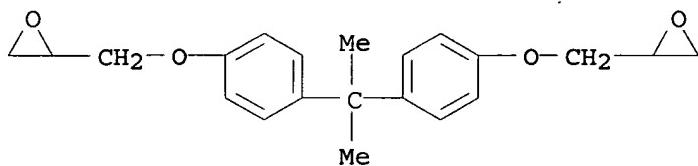
CRN 79-41-4
CMF C₄ H₆ O₂

CM 11

CRN 25085-99-8
CMF (C₂₁ H₂₄ O₄)_x
CCI PMS

CM 12

CRN 1675-54-3
CMF C₂₁ H₂₄ O₄



IT 144820-12-2P, Allyl methacrylate-butyl acrylate-1,4-butylene glycol diacrylate-ethyl acrylate-2-hydroxyethyl methacrylate-methyl methacrylate graft copolymer

RL: IMF (Industrial manufacture); MOA (Modifier or additive use);
PREP (Preparation); USES (Uses)
(multilayer, particles; halogen-free
composite laminated boards with low thermal expansion)

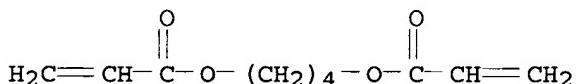
RN 144820-12-2 HCPLUS

CN 2-Propenoic acid, 2-methyl-, 2-hydroxyethyl ester, polymer with 1,4-butanediyl di-2-propenoate, butyl 2-propenoate, ethyl 2-propenoate, methyl 2-methyl-2-propenoate and 2-propenyl 2-methyl-2-propenoate, graft (9CI) (CA INDEX NAME)

CM 1

CRN 1070-70-8

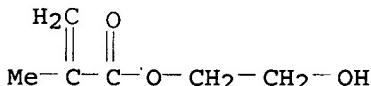
CMF C10 H14 O4



CM 2

CRN 868-77-9

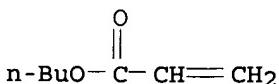
CMF C6 H10 O3



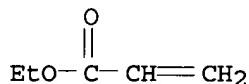
CM 3

CRN 141-32-2

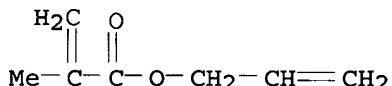
CMF C7 H12 O2



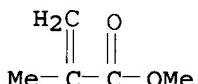
CM 4

CRN 140-88-5
CMF C5 H8 O2

CM 5

CRN 96-05-9
CMF C7 H10 O2

CM 6

CRN 80-62-6
CMF C5 H8 O2

IT 9003-18-3D, carboxy-terminated

RL: POF (Polymer in formulation); TEM (Technical or engineered material use); USES (Uses)

(nitrile rubber, CTBN 1300X8; halogen-free composite laminated boards with low thermal expansion)

RN 9003-18-3 HCPLUS

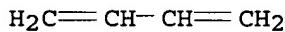
CN 2-Propenenitrile, polymer with 1,3-butadiene (9CI) (CA INDEX NAME)

CM 1

CRN 107-13-1
CMF C3 H3 N

CM 2

CRN 106-99-0
CMF C4 H6



L50 ANSWER 3 OF 35 HCPLUS COPYRIGHT 2005 ACS on STN
 AN 2004:698186 HCPLUS
 DN 141:226377
 TI **Halogen-free ignition-resistant**
 thermoplastic resin compositions containing modified multifunctional
 epoxy resins
 IN Gan, Joseph; King, Bruce A.; Rego, Jose M.; Youngson, Chris G.
 PA Dow Global Technologies Inc., USA
 SO PCT Int. Appl., 25 pp.
 CODEN: PIXXD2
 DT Patent
 LA English
 FAN.CNT 2

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	WO 2004072179	A1	20040826	WO 2003-US11408	200304 15
	W:	AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, OM, PH, PL, PT, RO, RU, SD, SE, SG, SK, SL, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, YU, ZA, ZM, ZW			
	RW:	GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG			
PRAI	US 2003-445638P	P	20030206		
AB	The compn. comprises (A) a thermoplastic polymer or polymer blend, (B) a modified multifunctional epoxy resin contg. 0-20% (based on the total wt. of the epoxy resin) residual epoxy groups, and (C) a phosphorus-contg. compd. The modified multifunctional epoxy compd. enhances the flame retardancy of the thermoplastic polymer, increase the compatibility of the epoxy resin with the thermoplastic polymer without causing black specks in the final product, and improved mech. properties, melt flow rate and processability. Thus, a compn. comprising high-impact polystyrene 55, polyphenylene oxide 22, FP 500 (diphosphosphate) 18, an epoxy resin prep'd. from Den 438 (epoxy novolak) and 2-phenylphenol 5 parts showed melt flow rate 5.6 g/a0 min, elongation 19% and UL 94 fire resistance rating V-0.				
IC	ICM C08L051-04 ICS C08K005-523				
CC	37-6 (Plastics Manufacture and Processing)				

- ST epoxy resin modified thermoplastic **ignition resistance**;
 high impact polystyrene polyphenylene oxide blend; phosphorus compd
fireproofing agent thermoplastic compn
- IT **Fire-resistant materials**
- Fireproofing agents**
 - (**halogen-free ignition-resistant**
 thermoplastic resin compns. contg. modified multifunctional epoxy resins)
- IT Polycarbonates, uses
- Polyesters, uses
- Polyolefins
- Polyoxyphenylenes
- RL: POF (Polymer in formulation); TEM (Technical or engineered material use); USES (Uses)
- (**halogen-free ignition-resistant**
 thermoplastic resin compns. contg. modified multifunctional epoxy resins)
- IT Molded plastics, uses
- Polymer blends
- RL: TEM (Technical or engineered material use); USES (Uses)
- (**halogen-free ignition-resistant**
 thermoplastic resin compns. contg. modified multifunctional epoxy resins)
- IT Polyolefins
- RL: POF (Polymer in formulation); TEM (Technical or engineered material use); USES (Uses)
- (interpolymers with carbon monoxide; **halogen-free ignition-resistant** thermoplastic resin compns. contg. modified multifunctional epoxy resins)
- IT Epoxy resins, uses
- RL: POF (Polymer in formulation); TEM (Technical or engineered material use); USES (Uses)
- (modified; **halogen-free ignition-resistant** thermoplastic resin compns. contg. modified multifunctional epoxy resins)
- IT Vinyl compounds, uses
- RL: POF (Polymer in formulation); TEM (Technical or engineered material use); USES (Uses)
- (polymers, arom.; **halogen-free ignition-resistant** thermoplastic resin compns. contg. modified multifunctional epoxy resins)
- IT Cycloalkenes
- RL: POF (Polymer in formulation); TEM (Technical or engineered material use); USES (Uses)
- (polymers; **halogen-free ignition-resistant** thermoplastic resin compns. contg. modified multifunctional epoxy resins)
- IT Plastics, uses
- RL: TEM (Technical or engineered material use); USES (Uses)
- (thermoplastics; **halogen-free ignition-resistant** thermoplastic resin compns. contg. modified multifunctional epoxy resins)
- IT Aromatic compounds
- RL: POF (Polymer in formulation); TEM (Technical or engineered material use); USES (Uses)
- (vinyl, polymers; **halogen-free**

ignition-resistant thermoplastic resin compns. contg.
modified multifunctional epoxy resins)

IT 7664-38-2D, Phosphoric acid, aryl esters
RL: MOA (Modifier or additive use); USES (Uses)
(fireproofing agent; halogen-free
ignition-resistant thermoplastic resin compns. contg.
modified multifunctional epoxy resins)

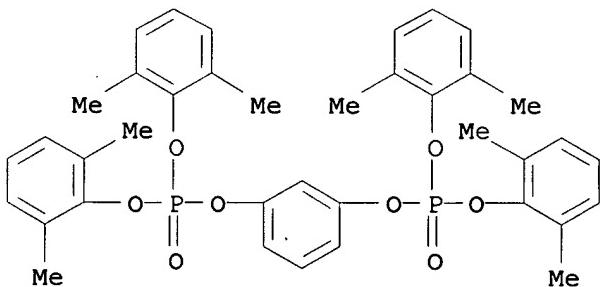
IT 139189-30-3, FP 500
RL: POF (Polymer in formulation); TEM (Technical or engineered
material use); USES (Uses)
(fireproofing agent; halogen-free
ignition-resistant thermoplastic resin compns. contg.
modified multifunctional epoxy resins)

IT 630-08-0D, Carbon monoxide, interpolymers with polyolefins
9003-54-7, Acrylonitrile-styrene copolymer 9003-56-9
, ABS 9010-77-9, Acrylic acid-ethylene copolymer
9041-80-9, Polyphenylene oxide 25038-59-9, Poly(ethylene
terephthalate), uses 25067-34-9, Ethylene-vinyl alcohol copolymer
25085-99-8, Bisphenol A diglycidyl ether polymer 106107-54-4,
Butadiene-styrene block copolymer 348625-88-7D, diglycidyl ether
744209-80-1
RL: POF (Polymer in formulation); TEM (Technical or engineered
material use); USES (Uses)
(halogen-free ignition-resistant
thermoplastic resin compns. contg. modified multifunctional epoxy
resins)

IT 9003-53-6
RL: POF (Polymer in formulation); TEM (Technical or engineered
material use); USES (Uses)
(impact-resistant; halogen-free
ignition-resistant thermoplastic resin compns. contg.
modified multifunctional epoxy resins)

IT 139189-30-3, FP 500
RL: POF (Polymer in formulation); TEM (Technical or engineered
material use); USES (Uses)
(fireproofing agent; halogen-free
ignition-resistant thermoplastic resin compns. contg.
modified multifunctional epoxy resins)

RN 139189-30-3 HCPLUS
CN Phosphoric acid, 1,3-phenylene tetrakis(2,6-dimethylphenyl) ester
(9CI) (CA INDEX NAME)



IT 9003-54-7, Acrylonitrile-styrene copolymer 9003-56-9

, ABS 9010-77-9, Acrylic acid-ethylene copolymer
 25038-59-9, Poly(ethylene terephthalate), uses
 744209-80-1

RL: POF (Polymer in formulation); TEM (Technical or engineered material use); USES (Uses)
 (halogen-free ignition-resistant
 thermoplastic resin compns. contg. modified multifunctional epoxy resins)

RN 9003-54-7 HCAPLUS

CN 2-Propenenitrile, polymer with ethenylbenzene (9CI) (CA INDEX NAME)

CM 1

CRN 107-13-1

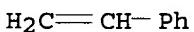
CMF C3 H3 N



CM 2

CRN 100-42-5

CMF C8 H8



RN 9003-56-9 HCAPLUS

CN 2-Propenenitrile, polymer with 1,3-butadiene and ethenylbenzene (9CI) (CA INDEX NAME)

CM 1

CRN 107-13-1

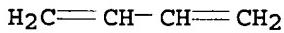
CMF C3 H3 N



CM 2

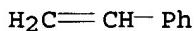
CRN 106-99-0

CMF C4 H6



CM 3

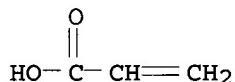
CRN 100-42-5
 CMF C8 H8



RN 9010-77-9 HCPLUS
 CN 2-Propenoic acid, polymer with ethene (9CI) (CA INDEX NAME)

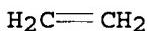
CM 1

CRN 79-10-7
 CMF C3 H4 O2

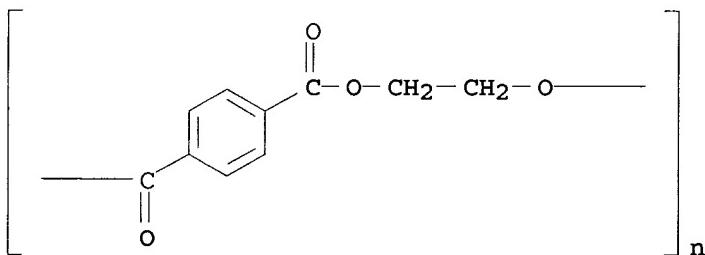


CM 2

CRN 74-85-1
 CMF C2 H4



RN 25038-59-9 HCPLUS
 CN Poly(oxy-1,2-ethanediylloxycarbonyl-1,4-phenylene carbonyl) (9CI) (CA INDEX NAME)



RN 744209-80-1 HCPLUS
 CN [1,1'-Biphenyl]-2-ol, polymer with DEN 438 (9CI) (CA INDEX NAME)

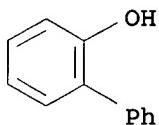
CM 1

CRN 63957-64-2
 CMF Unspecified
 CCI PMS, MAN

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***

CM 2

CRN 90-43-7
CMF C12 H10 O



L50 ANSWER 4 OF 35 HCPLUS COPYRIGHT 2005 ACS on STN
 AN 2004:698179 HCPLUS
 DN 141:207984
 TI Halogen-free ignition-resistant thermoplastic resin compositions
 IN Gan, Joseph; King, Bruce; Rego, Jose M.; Youngson, Chris G.
 PA Dow Global Technologies Inc., USA
 SO PCT Int. Appl., 24 pp.
 CODEN: PIXXD2

DT Patent
 LA English

FAN.CNT 2

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	WO 2004072170	A2	20040826	WO 2004-US3499	200402 06
	WO 2004072170	A3	20041118		
	W:	AE, AE, AG, AL, AL, AM, AM, AM, AT, AT, AU, AZ, AZ, BA, BB, BG, BG, BR, BR, BW, BY, BY, BZ, BZ, CA, CH, CN, CN, CO, CO, CR, CR, CU, CU, CZ, CZ, DE, DE, DK, DK, DM, DZ, EC, EC, EE, EE, EG, ES, ES, FI, FI, GB, GD, GE, GE, GH, GM, HR, HR, HU, HU, ID, IL, IN, IS, JP, JP, KE, KE, KG, KG, KP, KP, KP, KR, KR, KZ, KZ, KZ, LC, LK, LR, LS, LS, LT, LU, LV, MA, MD, MD, MG, MK, MN, MW, MX, MX, MZ, MZ, NA, NI			
	RW:	BW, GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG			

PRAI US 2003-445638P P 20030206

AB Title halogen-free ignition-resistant polymer compn. comprises: (A) a thermoplastic polymer or polymer blend, (B) a modified multi-functional epoxy resin contg. from 0-20 wt% residual epoxy groups, based on the total wt. of the epoxy resin, and (C) a phosphorus contg. compd. The use of a modified multifunctional epoxy compd. having from 0-20 wt% residual epoxy groups, enhances the flame retardancy of the thermoplastic polymer, and can increase the compatibility of the epoxy resin with

the thermoplastic polymer through the use of the modified functionalities, without causing black specks in the final product. It has been addnl. discovered that modified multi-functional epoxy resins can also contribute to improved mech. properties, melt flow rate and processability.

- IC ICM C08L
 CC 37-6 (Plastics Manufacture and Processing)
 Section cross-reference(s): 38
 ST halogen free ignition resistant
 thermoplastic epoxy resin compn
 IT Phenolic resins, properties
 RL: POF (Polymer in formulation); PRP (Properties); TEM (Technical or engineered material use); USES (Uses)
 (epoxy, novolak; prodn. of halogen-free
 ignition-resistant thermoplastic resin compns.)
 IT Polyphosphates
 RL: MOA (Modifier or additive use); USES (Uses)
 (fire retardant; prodn. of halogen-
 free ignition-resistant thermoplastic resin
 compns.)
 IT Epoxy resins, properties
 RL: POF (Polymer in formulation); PRP (Properties); TEM (Technical or engineered material use); USES (Uses)
 (phenolic, novolak; prodn. of halogen-free
 ignition-resistant thermoplastic resin compns.)
 IT Impact-resistant materials
 (polystyrene; prodn. of halogen-free
 ignition-resistant thermoplastic resin compns.)
 IT Fire-resistant materials
 (prodn. of halogen-free ignition
 -resistant thermoplastic resin compns.)
 IT Polymer blends
 Polyoxyphenylenes
 RL: POF (Polymer in formulation); PRP (Properties); TEM (Technical or engineered material use); USES (Uses)
 (prodn. of halogen-free ignition
 -resistant thermoplastic resin compns.)
 IT Polycarbonates, uses
 Polyesters, uses
 Polyolefins
 RL: POF (Polymer in formulation); TEM (Technical or engineered material use); USES (Uses)
 (prodn. of halogen-free ignition
 -resistant thermoplastic resin compns.)
 IT Plastics, uses
 RL: POF (Polymer in formulation); TEM (Technical or engineered material use); USES (Uses)
 (thermoplastics; prodn. of halogen-free
 ignition-resistant thermoplastic resin compns.)
 IT 5945-33-5, Bisphenol A bis(diphenyl phosphate) 57583-54-7,
 Resorcinol bis(diphenyl phosphate)
 RL: MOA (Modifier or additive use); USES (Uses)
 (fire retardant; prodn. of halogen-
 free ignition-resistant thermoplastic resin
 compns.)
 IT 90-43-7, 2-Phenylphenol

RL: MOA (Modifier or additive use); USES (Uses)
 (impact-resistant; prodn. of **halogen-free**
ignition-resistant thermoplastic resin compns.)

IT 9003-53-6
 RL: POF (Polymer in formulation); PRP (Properties); TEM (Technical
 or engineered material use); USES (Uses)
 (impact-resistant; prodn. of **halogen-free**
ignition-resistant thermoplastic resin compns.)

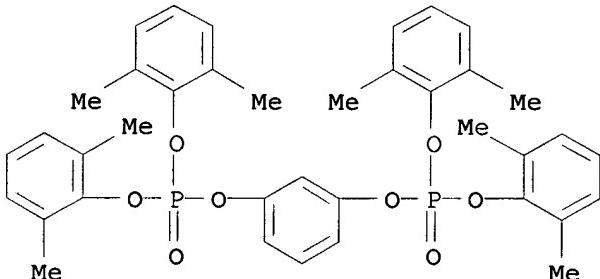
IT 139189-30-3, FP 500
 RL: MOA (Modifier or additive use); USES (Uses)
 (prodn. of **halogen-free ignition**
-resistant thermoplastic resin compns.)

IT 63957-64-2, DEN 438 744245-36-1, N 2245
 RL: POF (Polymer in formulation); PRP (Properties); TEM (Technical
 or engineered material use); USES (Uses)
 (prodn. of **halogen-free ignition**
-resistant thermoplastic resin compns.)

IT 9003-54-7, Acrylonitrile-styrene copolymer 9003-56-9
 , Acrylonitrile-butadiene-styrene copolymer 9010-77-9,
 Acrylic acid-ethylene copolymer 24937-78-8, EVA 25038-59-9
 , PET polymer, uses 106107-54-4, Styrene-butadiene block copolymer
 RL: POF (Polymer in formulation); TEM (Technical or engineered
 material use); USES (Uses)
 (prodn. of **halogen-free ignition**
-resistant thermoplastic resin compns.)

IT 139189-30-3, FP 500
 RL: MOA (Modifier or additive use); USES (Uses)
 (prodn. of **halogen-free ignition**
-resistant thermoplastic resin compns.)

RN 139189-30-3 HCPLUS
 CN Phosphoric acid, 1,3-phenylene tetrakis(2,6-dimethylphenyl) ester
 (9CI) (CA INDEX NAME)



IT 63957-64-2, DEN 438
 RL: POF (Polymer in formulation); PRP (Properties); TEM (Technical
 or engineered material use); USES (Uses)
 (prodn. of **halogen-free ignition**
-resistant thermoplastic resin compns.)

RN 63957-64-2 HCPLUS
 CN DEN 438 (9CI) (CA INDEX NAME)

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***

IT 9003-54-7, Acrylonitrile-styrene copolymer 9003-56-9

, Acrylonitrile-butadiene-styrene copolymer 9010-77-9,
 Acrylic acid-ethylene copolymer 25038-59-9, PET polymer,
 uses

RL: POF (Polymer in formulation); TEM (Technical or engineered
 material use); USES (Uses)
 (prodn. of halogen-free ignition
 -resistant thermoplastic resin compns.)

RN 9003-54-7 HCPLUS

CN 2-Propenenitrile, polymer with ethenylbenzene (9CI) (CA INDEX NAME)

CM 1

CRN 107-13-1

CMF C3 H3 N



CM 2

CRN 100-42-5

CMF C8 H8



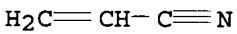
RN 9003-56-9 HCPLUS

CN 2-Propenenitrile, polymer with 1,3-butadiene and ethenylbenzene
 (9CI) (CA INDEX NAME)

CM 1

CRN 107-13-1

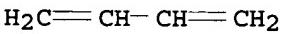
CMF C3 H3 N



CM 2

CRN 106-99-0

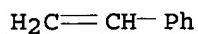
CMF C4 H6



CM 3

CRN 100-42-5

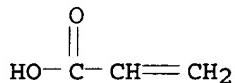
CMF C8 H8



RN 9010-77-9 HCPLUS
 CN 2-Propenoic acid, polymer with ethene (9CI) (CA INDEX NAME)

CM 1

CRN 79-10-7
 CMF C3 H4 O2

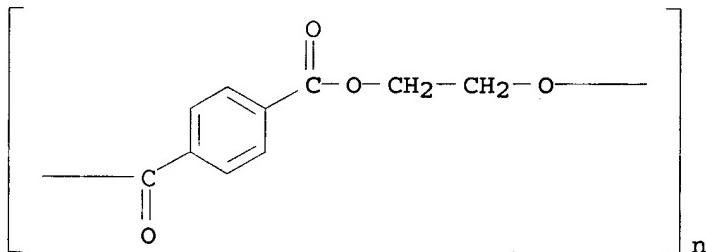


CM 2

CRN 74-85-1
 CMF C2 H4



RN 25038-59-9 HCPLUS
 CN Poly(oxy-1,2-ethanediylloxycarbonyl-1,4-phenylenecarbonyl) (9CI) (CA INDEX NAME)



L50 ANSWER 5 OF 35 HCPLUS COPYRIGHT 2005 ACS on STN
 AN 2004:612144 HCPLUS
 DN 141:141569
 TI Fire-resistant resin compositions, their manufacture, and their moldings with suppressed mold deposition and bleed out of fireproofing agents
 IN Harashina, Hatsuhiro
 PA Polyplastics Co., Ltd., Japan
 SO Jpn. Kokai Tokkyo Koho, 54 pp.

CODEN: JKXXAF
 DT Patent
 LA Japanese
 FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 2004210882	A2	20040729	JP 2002-379984	20021227

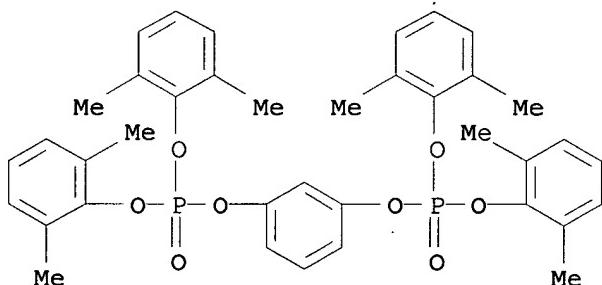
PRAI JP 2002-379984 20021227
 AB The compns., useful for electronic parts, OA equipment, elec. appliances, automobile parts, and machinery parts, contain base polymers, cyano-contg. heterocyclic compds., and P compds., arom. polymers, N compds., inorg. metal compds., S compds., and/or Si compds. Thus, a test piece contg. Duranex (PBT) 100, tris(2-cyanoethyl) isocyanurate 10, and Novaexcel 140 (red P) 8 parts showed fire resistance (UL 94) V-0 and no blooming.
 IC ICM C08L101-00
 ICS C08K003-00; C08K005-00
 CC 38-3 (Plastics Fabrication and Uses)
 Section cross-reference(s): 37
 ST fire resistance molding PBT cyanoethyl isocyanurate; cyano heterocycle fireproofing agent bleeding prevention; mold deposition prevention polystyrene phosphate
 IT Polysiloxanes, uses
 RL: MOA (Modifier or additive use); TEM (Technical or engineered material use); USES (Uses)
 (DC 4-7015, fireproofing aid; fire-resistant resin compns. contg. cyano-contg. heterocyclic compds. for moldings with suppressed mold deposition and bleed out of fireproofing agents)
 IT Zeolite 3A
 RL: MOA (Modifier or additive use); TEM (Technical or engineered material use); USES (Uses)
 (Zeolite A 3, fireproofing aid; fire-resistant resin compns. contg. cyano-contg. heterocyclic compds. for moldings with suppressed mold deposition and bleed out of fireproofing agents)
 IT Polyamides, uses
 Polycarbonates, uses
 RL: MOA (Modifier or additive use); TEM (Technical or engineered material use); USES (Uses)
 (arom., fireproofing aid; fire-resistant resin compns. contg. cyano-contg. heterocyclic compds. for moldings with suppressed mold deposition and bleed out of fireproofing agents)
 IT Polyoxyphenylenes
 RL: MOA (Modifier or additive use); POF (Polymer in formulation); TEM (Technical or engineered material use); USES (Uses)
 (base polymer or fireproofing aid; fire-resistant resin compns. contg. cyano-contg. heterocyclic compds. for moldings with suppressed mold deposition and bleed out of fireproofing agents)
 IT Electric apparatus
 Fire-resistant materials
 Fireproofing agents
 Machinery parts
 (fire-resistant resin compns. contg. cyano-contg. heterocyclic compds. for moldings with suppressed mold deposition and bleed

- out of fireproofing agents)
- IT Acrylic polymers, uses
 - Polyamides, uses
 - Polycarbonates, uses
 - Polyesters, uses
 - Polyolefins
 - Polyoxymethylene, uses
 - RL: POF (Polymer in formulation); TEM (Technical or engineered material use); USES (Uses)
 - (fire-resistant resin compns. contg. cyano-contg. heterocyclic compds. for moldings with suppressed mold deposition and bleed out of fireproofing agents)
- IT Molded plastics, uses
 - RL: TEM (Technical or engineered material use); USES (Uses)
 - (fire-resistant resin compns. contg. cyano-contg. heterocyclic compds. for moldings with suppressed mold deposition and bleed out of fireproofing agents)
- IT Epoxy resins, uses
 - Polythiophenylenes
 - RL: MOA (Modifier or additive use); TEM (Technical or engineered material use); USES (Uses)
 - (fireproofing aid; fire-resistant resin compns. contg. cyano-contg. heterocyclic compds. for moldings with suppressed mold deposition and bleed out of fireproofing agents)
- IT Polybenzyls
 - RL: MOA (Modifier or additive use); TEM (Technical or engineered material use); USES (Uses)
 - (hydroxy-contg., fireproofing aid; fire-resistant resin compns. contg. cyano-contg. heterocyclic compds. for moldings with suppressed mold deposition and bleed out of fireproofing agents)
- IT Phenolic resins, uses
 - RL: MOA (Modifier or additive use); TEM (Technical or engineered material use); USES (Uses)
 - (novolak, fireproofing aid; fire-resistant resin compns. contg. cyano-contg. heterocyclic compds. for moldings with suppressed mold deposition and bleed out of fireproofing agents)
- IT Automobiles
 - (parts; fire-resistant resin compns. contg. cyano-contg. heterocyclic compds. for moldings with suppressed mold deposition and bleed out of fireproofing agents)
- IT Polyphosphazenes
 - RL: MOA (Modifier or additive use); TEM (Technical or engineered material use); USES (Uses)
 - (phenoxy, fireproofing aid; fire-resistant resin compns. contg. cyano-contg. heterocyclic compds. for moldings with suppressed mold deposition and bleed out of fireproofing agents)
- IT 24936-68-3, Panlite L 1225, uses
 - RL: MOA (Modifier or additive use); POF (Polymer in formulation); TEM (Technical or engineered material use); USES (Uses)
 - (Iupilon S 3000, base polymer or fireproofing aid; fire-resistant resin compns. contg. cyano-contg. heterocyclic compds. for moldings with suppressed mold deposition and bleed out of fireproofing agents)
- IT 25134-01-4
 - RL: MOA (Modifier or additive use); POF (Polymer in formulation); TEM (Technical or engineered material use); USES (Uses)

- (assumed monomers, base polymer or fireproofing aid; fire-resistant resin compns. contg. cyano-contg. heterocyclic compds. for moldings with suppressed mold deposition and bleed out of fireproofing agents)
- IT 25068-38-6, Bisphenol A-epichlorohydrin copolymer
 RL: MOA (Modifier or additive use); TEM (Technical or engineered material use); USES (Uses)
 (assumed monomers, fireproofing aid; fire-resistant resin compns. contg. cyano-contg. heterocyclic compds. for moldings with suppressed mold deposition and bleed out of fireproofing agents)
- IT 25037-45-0 26062-94-2 30580-17-7, 1,4-Butanediol-isophthalic acid-terephthalic acid copolymer 55097-77-3, 1,4-Butanediol-isophthalic acid-terephthalic acid copolymer, sru 88859-97-6
 RL: POF (Polymer in formulation); TEM (Technical or engineered material use); USES (Uses)
 (assumed monomers; fire-resistant resin compns. contg. cyano-contg. heterocyclic compds. for moldings with suppressed mold deposition and bleed out of fireproofing agents)
- IT 24938-67-8, YPX 100F
 RL: MOA (Modifier or additive use); POF (Polymer in formulation); TEM (Technical or engineered material use); USES (Uses)
 (base polymer or fireproofing aid; fire-resistant resin compns. contg. cyano-contg. heterocyclic compds. for moldings with suppressed mold deposition and bleed out of fireproofing agents)
- IT 9003-53-6, Toyo Styrol G 19 9003-54-7, Cevian JD 9003-56-9, Cevian DP 611 24968-12-5, Duranex 25038-54-4, Ube Nylon 6, uses 25038-59-9, Bellpet EFG 10, uses 25822-54-2, Rodrun LC 3000 81843-52-9, Vectra A 950 126730-46-9, Duracon M 90-44
 RL: POF (Polymer in formulation); TEM (Technical or engineered material use); USES (Uses)
 (fire-resistant resin compns. contg. cyano-contg. heterocyclic compds. for moldings with suppressed mold deposition and bleed out of fireproofing agents)
- IT 2904-27-0, Bis(2-cyanoethyl) isocyanurate 2904-28-1 3058-04-6, 3,9-Bis(2-cyanoethyl)-2,4,8,10-tetraoxaspiro[5.5]undecane
 RL: MOA (Modifier or additive use); TEM (Technical or engineered material use); USES (Uses)
 (fireproofing agent; fire-resistant resin compns. contg. cyano-contg. heterocyclic compds. for moldings with suppressed mold deposition and bleed out of fireproofing agents)
- IT 110-21-4, Biurea 461-58-5, Dicyandiamide 1309-42-8, Kisuma 5E 1449-89-4 5945-33-5, Bisphenol A bis(diphenyl phosphate) 7757-93-9, Calcium hydrogen phosphate 9003-53-6D, Polystyrene, sulfonated, sodium salt 12767-90-7, Firebrake ZB 22535-90-6, CTU-Guanamine 24979-70-2, Maruka Lyncur M-S 1P 25212-74-2, Poly(1,4-phenylene sulfide) 26590-50-1, Polyarylate U 100 26834-02-6, Milex XL 225 34670-63-8 36240-31-0, 10-Hydroxy-9,10-dihydro-9-oxa-10-phosphaphenanthrene-10-oxide 37640-57-6, MC 610 39281-59-9 117313-45-8, Epikote 1004K 139189-30-3, Resorcinol bis(di-2,6-xylyl phosphate) 172827-17-7, Sumilite PR 53647 176316-86-2, Aluminum ethylmethylphosphinate 178965-58-7 380366-74-5, PMP 200 725268-23-5
 RL: MOA (Modifier or additive use); TEM (Technical or engineered material use); USES (Uses)
 (fireproofing aid; fire-resistant resin compns. contg.

cyano-contg. heterocyclic compds. for moldings with suppressed
mold deposition and bleed out of fireproofing agents)

- IT 7723-14-0, Novaexcel 140, uses
RL: MOA (Modifier or additive use); TEM (Technical or engineered
material use); USES (Uses)
(red, fireproofing aid; fire-resistant resin compns. contg.
cyano-contg. heterocyclic compds. for moldings with suppressed
mold deposition and bleed out of fireproofing agents)
- IT 139189-30-3, Resorcinol bis(di-2,6-xylyl phosphate)
RL: MOA (Modifier or additive use); TEM (Technical or engineered
material use); USES (Uses)
(fireproofing aid; fire-resistant resin compns. contg.
cyano-contg. heterocyclic compds. for moldings with suppressed
mold deposition and bleed out of fireproofing agents)
- RN 139189-30-3 HCPLUS
CN Phosphoric acid, 1,3-phenylene tetrakis(2,6-dimethylphenyl) ester
(9CI) (CA INDEX NAME)



L50 ANSWER 6 OF 35 HCPLUS COPYRIGHT 2005 ACS on STN

AN 2004:605702 HCPLUS

DN 141:157927

TI Guanamine compounds, their manufacture, and fire-resistant
polymer compositions and moldings with good bleed-out resistance

IN Harashina, Hatsuhiiko

PA Polyplastics Co., Ltd., Japan

SO Jpn. Kokai Tokkyo Koho, 35 pp.

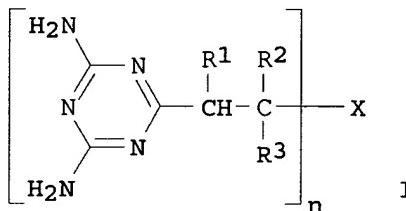
CODEN: JKXXAF

DT Patent

LA Japanese

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 2004210640	A2	20040729	JP 2002-378455	20021226
PRAI	JP 2002-378455		20021226		
OS	MARPAT 141:157927				
GI					



- AB** Title guanamine compds. I (R1-R3 = H, alkyl; X = residue of OH compds. or thiols, O, S; n = 1-6) are manufd. by reaction of (YR1CHCR2R3)nX (R1-R3, X, n = same as in I; Y = nitrile, X1CO; X1 = OH, Cl, alkoxy, aryloxy) and dicyandiamide or biguanides in the presence or absence of basic catalysts. Salts of I are manufd. by reaction of I and N-contg. cyclic compds. having OH groups. Thus, Duracon M 90-44 (polyacetal copolymer), bis[β -(2,4-diamino-s-triazin-6-yl)ethyl] ether, Irganox 245 [triethylene glycol bis[3-(3-tert-butyl-5-methyl-4-hydroxyphenyl)] propionate], and Ca 12-hydroxystearate were kneaded and press molded to give a test piece showing fire retardance V-1 (UL 94).
- IC** ICM C07D251-18
ICS C08K005-3477; C08L101-00
- CC** 37-6 (Plastics Manufacture and Processing)
- ST** guanamine fireproofing agent bleed out resistance; moldability guanamine fireproofing agent polymer blend; halogen free fireproofing agent guanamine
- IT** Zeolite 3A
RL: MOA (Modifier or additive use); TEM (Technical or engineered material use); USES (Uses)
(Zeolum A 3, fireproofing agents; manuf. of guanamine compds. as fireproofing agents for polymer compns. with good bleed-out resistance)
- IT** Phenolic resins, uses
RL: POF (Polymer in formulation); TEM (Technical or engineered material use); USES (Uses)
(aralkyl; manuf. of guanamine compds. as fireproofing agents for polymer compns. with good bleed-out resistance)
- IT** Glass fibers, uses
RL: MOA (Modifier or additive use); TEM (Technical or engineered material use); USES (Uses)
(chopped, fillers; manuf. of guanamine compds. as fireproofing agents for polymer compns. with good bleed-out resistance)
- IT** Fire-resistant materials
Fireproofing agents
(manuf. of guanamine compds. as fireproofing agents for polymer compns. with good bleed-out resistance)
- IT** Fluoropolymers, uses
RL: MOA (Modifier or additive use); TEM (Technical or engineered material use); USES (Uses)
(manuf. of guanamine compds. as fireproofing agents for polymer compns. with good bleed-out resistance)

- IT Epoxy resins, uses
 RL: POF (Polymer in formulation); TEM (Technical or engineered material use); USES (Uses)
 (manuf. of guanamine compds. as fireproofing agents for polymer compns. with good bleed-out resistance)
- IT Polyamides, uses
 RL: POF (Polymer in formulation); TEM (Technical or engineered material use); USES (Uses)
 (manuf. of guanamine compds. as fireproofing agents for polymer compns. with good bleed-out resistance)
- IT Polycarbonates, uses
 RL: POF (Polymer in formulation); TEM (Technical or engineered material use); USES (Uses)
 (manuf. of guanamine compds. as fireproofing agents for polymer compns. with good bleed-out resistance)
- IT Polyesters, uses
 RL: POF (Polymer in formulation); TEM (Technical or engineered material use); USES (Uses)
 (manuf. of guanamine compds. as fireproofing agents for polymer compns. with good bleed-out resistance)
- IT Polyoxyphenylenes
 RL: POF (Polymer in formulation); TEM (Technical or engineered material use); USES (Uses)
 (manuf. of guanamine compds. as fireproofing agents for polymer compns. with good bleed-out resistance)
- IT Phenolic resins, uses
 RL: POF (Polymer in formulation); TEM (Technical or engineered material use); USES (Uses)
 (novolak; manuf. of guanamine compds. as fireproofing agents for polymer compns. with good bleed-out resistance)
- IT Polyphosphazenes
 RL: MOA (Modifier or additive use); TEM (Technical or engineered material use); USES (Uses)
 (oligomeric, phenoxy derivs., fireproofing agents; manuf. of guanamine compds. as fireproofing agents for polymer compns. with good bleed-out resistance)
- IT 9003-56-9, Acrylonitrile-butadiene-styrene copolymer
 RL: POF (Polymer in formulation); TEM (Technical or engineered material use); USES (Uses)
 (Cevian DP 61; manuf. of guanamine compds. as fireproofing agents for polymer compns. with good bleed-out resistance)
- IT 7723-14-0, Phosphorus, uses
 RL: MOA (Modifier or additive use); TEM (Technical or engineered material use); USES (Uses)
 (Novaexcel 140, Novaexcel F 5, fireproofing agents; manuf. of guanamine compds. as fireproofing agents for polymer compns. with good bleed-out resistance)
- IT 24938-67-8, Poly(2,6-dimethyl-1,4-phenylene oxide), sru
 RL: POF (Polymer in formulation); TEM (Technical or engineered material use); USES (Uses)
 (PPE-Polymer YPX 100F; manuf. of guanamine compds. as fireproofing agents for polymer compns. with good bleed-out resistance)
- IT 24936-68-3, Panlite L 1225, uses
 RL: POF (Polymer in formulation); TEM (Technical or engineered

material use); USES (Uses)
 (Panlite L 1225, Iupilon S 3000; manuf. of guanamine compds. as fireproofing agents for polymer compns. with good bleed-out resistance)

IT 6683-19-8, Irganox 1010 36443-68-2, Irganox 245
 RL: MOA (Modifier or additive use); TEM (Technical or engineered material use); USES (Uses)
 (antioxidants; manuf. of guanamine compds. as fireproofing agents for polymer compns. with good bleed-out resistance)

IT 25037-45-0 25134-01-4, Poly(2,6-dimethyl-1,4-phenylene oxide)
 25718-70-1 26062-94-2 30580-17-7,
 1,4-Butanediol-isophthalic acid-terephthalic acid copolymer
 RL: POF (Polymer in formulation); TEM (Technical or engineered material use); USES (Uses)
 (assumed monomers; manuf. of guanamine compds. as fireproofing agents for polymer compns. with good bleed-out resistance)

IT 9002-84-0, Polytetrafluoroethylene
 RL: MOA (Modifier or additive use); TEM (Technical or engineered material use); USES (Uses)
 (dripping-preventing agents; manuf. of guanamine compds. as fireproofing agents for polymer compns. with good bleed-out resistance)

IT 14807-96-6, Talc 3A, uses
 RL: MOA (Modifier or additive use); TEM (Technical or engineered material use); USES (Uses)
 (fillers; manuf. of guanamine compds. as fireproofing agents for polymer compns. with good bleed-out resistance)

IT 108-78-1, Melamine, uses 110-21-4, Biurea 1309-42-8, Kisuma 5E
 5945-33-5, Bisphenol A bis(diphenyl phosphate) 7757-93-9, Calcium hydrogenphosphate 7789-79-9, Calcium hypophosphite 9003-53-6D,
 Polystyrene, sulfonated, sodium salts 12767-90-7,
 Firebrake ZB 22535-90-6, CTU-guanamine 113089-04-6
 139189-30-3, PX 200 176316-86-2, Aluminum ethylmethylphosphinate 184378-36-7, Terraju C 60 380366-74-5,
 PMP 200
 RL: MOA (Modifier or additive use); TEM (Technical or engineered material use); USES (Uses)
 (fireproofing agents; manuf. of guanamine compds. as fireproofing agents for polymer compns. with good bleed-out resistance)

IT 100445-25-8P 710308-37-5P 718376-67-1P 718376-74-0P
 718377-03-8P
 RL: IMF (Industrial manufacture); MOA (Modifier or additive use);
 TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
 (manuf. of guanamine compds. as fireproofing agents for polymer compns. with good bleed-out resistance)

IT 9003-53-6, Toyo Styrol G 19 9003-54-7, Cevian JD
 24968-12-5, Duranex 24979-70-2, Maruka Lyncur M-S 1P
 25038-54-4, Ube Nylon 6, uses 25038-59-9, Bellpet EFG 10,
 uses 25805-74-7, Reny 6002 26834-02-6, Milex XL 225
 55097-77-3, 1,4-Butanediol-isophthalic acid-terephthalic acid copolymer, sru 117313-45-8, Epikote 1004K 126730-46-9, Duracon M
 90-44 172827-17-7, PR 53647

RL: POF (Polymer in formulation); TEM (Technical or engineered material use); USES (Uses)
 (manuf. of guanamine compds. as fireproofing agents for polymer compns. with good bleed-out resistance)

IT 108-80-5, Isocyanuric acid 111-97-7 461-58-5, Dicyandiamide 1656-48-0, 3,3'-Oxydipropionitrile 2465-93-2 3386-87-6
 RL: RCT (Reactant); RACT (Reactant or reagent)
 (reactants in guanamine prepns.; manuf. of guanamine compds. as fireproofing agents for polymer compns. with good bleed-out resistance)

IT 3159-62-4, Calcium 12-hydroxystearate 11097-59-9, DHT 4A 80693-00-1, ADK Stab PEP 36 153550-59-5, Sandostab P-EPQ
 RL: MOA (Modifier or additive use); TEM (Technical or engineered material use); USES (Uses)
 (stabilizers; manuf. of guanamine compds. as fireproofing agents for polymer compns. with good bleed-out resistance)

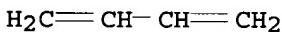
IT 9003-56-9, Acrylonitrile-butadiene-styrene copolymer
 RL: POF (Polymer in formulation); TEM (Technical or engineered material use); USES (Uses)
 (Cevian DP 61; manuf. of guanamine compds. as fireproofing agents for polymer compns. with good bleed-out resistance)

RN 9003-56-9 HCAPLUS
 CN 2-Propenenitrile, polymer with 1,3-butadiene and ethenylbenzene (9CI) (CA INDEX NAME)

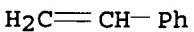
CM 1

CRN 107-13-1
CMF C3 H3 N

CM 2

CRN 106-99-0
CMF C4 H6

CM 3

CRN 100-42-5
CMF C8 H8

IT 26062-94-2 30580-17-7, 1,4-Butanediol-isophthalic

acid-terephthalic acid copolymer

RL: POF (Polymer in formulation); TEM (Technical or engineered material use); USES (Uses)

(assumed monomers; manuf. of guanamine compds. as fireproofing agents for polymer compns. with good bleed-out resistance)

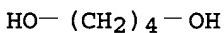
RN 26062-94-2 HCAPLUS

CN 1,4-Benzenedicarboxylic acid, polymer with 1,4-butanediol (9CI) (CA INDEX NAME)

CM 1

CRN 110-63-4

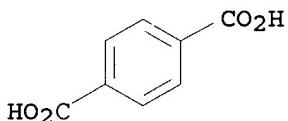
CMF C4 H10 O2



CM 2

CRN 100-21-0

CMF C8 H6 O4



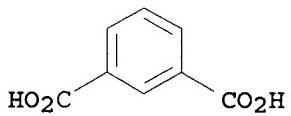
RN 30580-17-7 HCAPLUS

CN 1,3-Benzenedicarboxylic acid, polymer with 1,4-benzenedicarboxylic acid and 1,4-butanediol (9CI) (CA INDEX NAME)

CM 1

CRN 121-91-5

CMF C8 H6 O4



CM 2

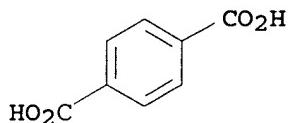
CRN 110-63-4

CMF C4 H10 O2

HO—(CH₂)₄—OH

CM 3

CRN 100-21-0
CMF C₈ H₁₆ O₄



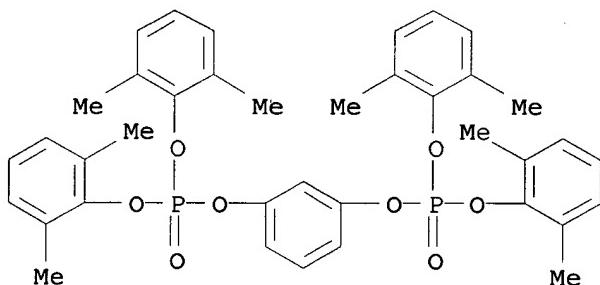
IT 139189-30-3, PX 200

RL: MOA (Modifier or additive use); TEM (Technical or engineered material use); USES (Uses)

(fireproofing agents; manuf. of guanamine compds. as fireproofing agents for polymer compns. with good bleed-out resistance)

RN 139189-30-3 HCPLUS

CN Phosphoric acid, 1,3-phenylene tetrakis(2,6-dimethylphenyl) ester (9CI) (CA INDEX NAME)



IT 9003-54-7, Cevian JD 24968-12-5, Duranex

25038-59-9, Bellpet EFG 10, uses

RL: POF (Polymer in formulation); TEM (Technical or engineered material use); USES (Uses)

(manuf. of guanamine compds. as fireproofing agents for polymer compns. with good bleed-out resistance)

RN 9003-54-7 HCPLUS

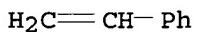
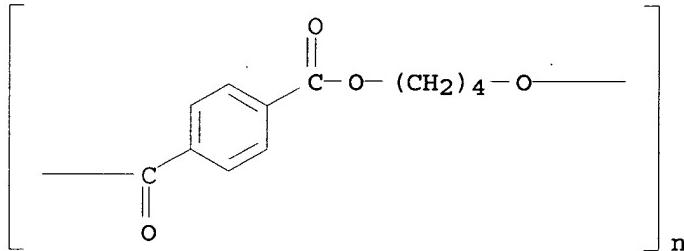
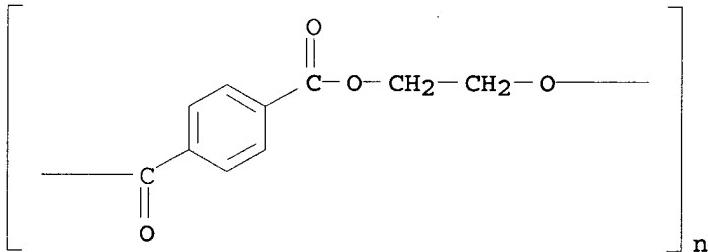
CN 2-Propenenitrile, polymer with ethenylbenzene (9CI) (CA INDEX NAME)

CM 1

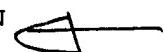
CRN 107-13-1
CMF C₃ H₃ N



CM 2

CRN 100-42-5
CMF C8 H8RN 24968-12-5 HCPLUS
CN Poly(oxy-1,4-butanediylloxycarbonyl-1,4-phenylenecarbonyl) (9CI) (CA
INDEX NAME)RN 25038-59-9 HCPLUS
CN Poly(oxy-1,2-ethanediylloxycarbonyl-1,4-phenylenecarbonyl) (9CI) (CA
INDEX NAME)

L50 ANSWER 7 OF 35 HCPLUS COPYRIGHT 2005 ACS on STN
 AN 2004:569952 HCPLUS
 DN 141:124547
 TI Fireproofing laser weldable polyester resin composition
 IN Hiroyuki, Sumi; Kobayashi, Toshikazu
 PA E.I. Du Pont De Nemours and Company, USA
 SO PCT Int. Appl., 17 pp.
 CODEN: PIXXD2
 DT Patent

 applicant

LA English

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE	
PI	WO 2004058869	A2	20040715	WO 2003-US40022	200312 12	
	WO 2004058869	A3	20040910			
	W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, UZ, VC, VN, YU, ZA, ZM, ZW					
	RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG					
	US 2004186208	A1	20040923	US 2003-728334	200312 04	
	CA 2508903	AA	20040715	CA 2003-2508903	200312 12	
	EP 1578856	A2	20050928	EP 2003-814035	200312 12	
	R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR, BG, CZ, EE, HU, SK					
PRAI	US 2002-434153P	P	20021217			
	WO 2003-US40022	W	20031212			
AB	Title polyester resin compn. having core-shell structure is composed of 10-90 wt.% thermoplastic polyester selected from PET, polybutylene terephthalate, and polypropylene terephthalate, 1-35 wt.% phosphorus contg. flame retardant, such as resorcinol bis(di-2,6-xylyl)phosphate, 1-25 wt.% novolac phenolic polymer , 1-25 wt.% acrylic polymer , and, optionally, inorg. reinforcing agents. A laser welded article prep'd. from the above compn. is also provided. Thus, PET 35.1 wt.%, resorcinol bis(di-2,6-xylyl)phosphate (PX 200) 13 wt.%, novolac phenolic resin (Novolac HRJ 12700CP) 8 wt.%, acrylic resin (Metablen S 2001) 6 wt.%, epoxy resin (Epikote 1009) 0.6 wt.%, carbon black (Cabot PE 3324) 1 wt.%, glass fiber (CS FT 689) 35 wt.%, and other additives, such as antioxidant, were blended to receive a polyester compn. having a tensile strength of 125 MPa and a elongation at break of 2.2 %.					
IC	ICM C08K005-523 ICS C08L067-02					
CC	37-6 (Plastics Manufacture and Processing) Section cross-reference(s): 38					
ST	fireproofing PET phenolic acrylic resin					

IT resorcinol bisdixylylphosphate **Polyester** compn
 Carbon black, uses
 RL: MOA (Modifier or additive use); USES (Uses)
 (Cabot PE 3324; fireproofing laser weldable **Polyester**
 resin compn.)

IT Glass fibers, uses
 RL: MOA (Modifier or additive use); USES (Uses)
 (JAFT 592, CS-FT 689; fireproofing laser weldable
Polyester resin compn.)

IT Acrylic polymers, uses
 Epoxy resins, uses
 Polyesters, uses
 RL: POF (Polymer in formulation); USES (Uses)
 (fireproofing laser weldable **Polyester** resin compn.)

IT Phenolic resins, uses
 RL: POF (Polymer in formulation); USES (Uses)
 (novolak; fireproofing laser weldable **Polyester** resin
 compn.)

IT 25610-17-7, Polypropylene terephthalate 26062-94-2, Polybutylene
 terephthalate
 RL: POF (Polymer in formulation); USES (Uses)
 (assumed monomers; fireproofing laser weldable **Polyester**
 resin compn.)

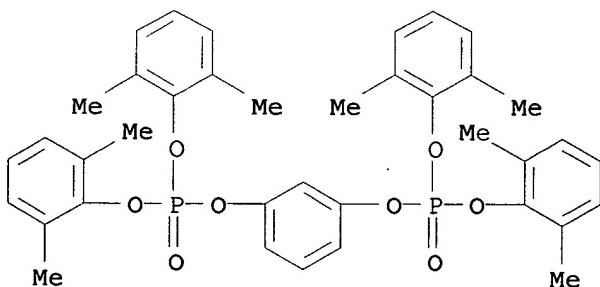
IT 139189-30-3, PX 200
 RL: MOA (Modifier or additive use); USES (Uses)
 (fireproofing laser weldable **Polyester** resin compn.)

IT 9022-20-2, Polypropylene terephthalate 24968-12-5, Polybutylene
 terephthalate 25038-59-9, PET polymer, uses 25068-38-6, Epikote
 1009 149718-92-3, Metablen S 2001 722494-11-3, HRJ 12700CP
 RL: POF (Polymer in formulation); USES (Uses)
 (fireproofing laser weldable **Polyester** resin compn.)

IT 139189-30-3, PX 200
 RL: MOA (Modifier or additive use); USES (Uses)
 (fireproofing laser weldable **Polyester** resin compn.)

RN 139189-30-3 HCAPLUS

CN Phosphoric acid, 1,3-phenylene tetrakis(2,6-dimethylphenyl) ester
 (9CI) (CA INDEX NAME)



L50 ANSWER 8 OF 35 HCAPLUS COPYRIGHT 2005 ACS on STN

AN 2003:943428 HCAPLUS

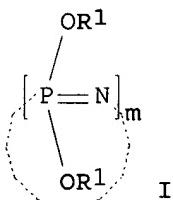
DN 140:17333

TI Halogen-free fire-resistant resin

IN compositions, their manufacture, and their moldings
 IN Harashina, Hatsuhiiko; Yamada, Shinya
 PA Polyplastics Co., Ltd., Japan
 SO Jpn. Kokai Tokkyo Koho, 41 pp.
 CODEN: JKXXAF

DT Patent
 LA Japanese
 FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 2003342482	A2	20031203	JP 2003-75748	200303 19
PRAI	JP 2002-76241	A	20020319		
OS	MARPAT 140:17333				
GI					



AB The compns. for elec. parts, office automation app., household elec. appliances, machinery parts, etc., are manufd. by mixing (A) base resins, (B) cyclic phosphazene compds. I ($m = 3-25$; $R_1 = \text{aryl}$, alkylaryl; 0.1-100 mol% of R_1 is alkylaryl), linear phosphazene compds. $X[P(OR_1)_2:N]_nY$ [$n = 3-10,000$; $X = N:P(OR_1)_3$, $N:P(O)OR_1$; $Y = P(OR_1)_4$, $P(O)(OR_1)_2$; $R_1 = \text{same as above}$], and/or crosslinked compds. of the cyclic compds. and/or the linear compds., and (C) fireproofing aids of arom. resins, N compds., inorg. metal compds., S compds., Si compds., and/or P compds. Alternatively, the compns. comprise (a) poly(alkylene arylates) 100, (b) cyclic or linear tolyloxyphosphazenes, cyclic or linear phenoxytolyloxyphosphazenes, and/or their crosslinked compds. 1-80, and (c) fireproofing aids of (1) carbonizable arom. resins, (2) amino-contg. cyclic N compds., their salts with oxo acids or organophosphoric acids, polyphosphoric acid amides, urea compds., and/or tetrazoles, (3) polyvalent metal salts of H_3PO_4 , H_3BO_3 , and/or stannic acid, (4) organosulfonic acid metal salts, (5) (branched) organosiloxanes, and/or (6) (in)org. P compds. 0.1-500 parts. Thus, a compn. contg. Duranex [poly(butylene terephthalate)] 100, phenoxytolyloxyphosphazene cyclic trimer and tetramer 15, PMP 200 (melamine melam melem polyphosphate salt) 75, an antioxidant 0.5, and a filler 50 parts was injection-molded to give a test piece showing UL-94 fire resistance V-0.

IC ICM C08L101-00
 ICS C08K003-00; C08K005-00; C08L043-02
 CC 37-6 (Plastics Manufacture and Processing)

Section cross-reference(s) : 38

ST resin phosphazene fireproofing agent molding;
cyclophosphazene polybutylene terephthalate phosphate molding
fire resistance

IT Polysiloxanes, uses
RL: MOA (Modifier or additive use); TEM (Technical or engineered material use); USES (Uses)
(Si Powder DC 4-7015, fireproofing aid; halogen-free fire-resistant resin compns. contg. phosphazenes and fireproofing aids for moldings)

IT Zeolite 3A
RL: MOA (Modifier or additive use); TEM (Technical or engineered material use); USES (Uses)
(Zeolum A 3, fireproofing aid; halogen-free fire-resistant resin compns. contg. phosphazenes and fireproofing aids for moldings)

IT Polyphosphoric acids
RL: MOA (Modifier or additive use); TEM (Technical or engineered material use); USES (Uses)
(amides, fireproofing aid; halogen-free fire-resistant resin compns. contg. phosphazenes and fireproofing aids for moldings)

IT Fluoropolymers, uses
RL: MOA (Modifier or additive use); TEM (Technical or engineered material use); USES (Uses)
(antidripping agent; halogen-free fire-resistant resin compns. contg. phosphazenes and fireproofing aids for moldings)

IT Polyamides, uses
Polyesters, uses
RL: MOA (Modifier or additive use); TEM (Technical or engineered material use); USES (Uses)
(arom., fireproofing aid; halogen-free fire-resistant resin compns. contg. phosphazenes and fireproofing aids for moldings)

IT Polycarbonates, uses
Polyoxyphenylenes
RL: MOA (Modifier or additive use); POF (Polymer in formulation); TEM (Technical or engineered material use); USES (Uses)
(base resin, fireproofing aid; halogen-free fire-resistant resin compns. contg. phosphazenes and fireproofing aids for moldings)

IT Glass fibers, uses
RL: MOA (Modifier or additive use); TEM (Technical or engineered material use); USES (Uses)
(chopped, filler; halogen-free fire-resistant resin compns. contg. phosphazenes and fireproofing aids for moldings)

IT Epoxy resins, uses
Polyphosphates
Polythiophenylenes
RL: MOA (Modifier or additive use); TEM (Technical or engineered material use); USES (Uses)
(fireproofing aid; halogen-free fire-resistant resin compns. contg. phosphazenes and fireproofing aids for moldings)

- IT **Fireproofing agents**
 (halogen-free fire-resistant resin
 compns. contg. phosphazenes and fireproofing aids for
 moldings)
- IT **Acrylic polymers, uses**
 Polyamides, uses
 Polyesters, uses
 Polyolefins
 RL: POF (Polymer in formulation); TEM (Technical or engineered
 material use); USES (Uses)
 (halogen-free fire-resistant resin
 compns. contg. phosphazenes and fireproofing aids for
 moldings)
- IT Molded plastics, uses
 RL: TEM (Technical or engineered material use); USES (Uses)
 (halogen-free fire-resistant resin
 compns. contg. phosphazenes and fireproofing aids for
 moldings)
- IT **Phenolic resins, uses**
 RL: MOA (Modifier or additive use); TEM (Technical or engineered
 material use); USES (Uses)
 (novolak, fireproofing aid; halogen-
 free fire-resistant resin compns. contg.
 phosphazenes and fireproofing aids for moldings)
- IT **Polyphosphazenes**
 RL: MOA (Modifier or additive use); TEM (Technical or engineered
 material use); USES (Uses)
 (phenoxy- and tolyloxy-contg., bisphenol A- or
 resorcinol-crosslinked; halogen-
 free fire-resistant resin compns. contg. phosphazenes and
 fireproofing aids for moldings)
- IT **Polyphosphazenes**
 RL: MOA (Modifier or additive use); TEM (Technical or engineered
 material use); USES (Uses)
 (phenoxy- and tolyloxy-contg., oligomeric; halogen-
 free fire-resistant resin compns. contg.
 phosphazenes and fireproofing aids for moldings)
- IT **Cyclophosphazenes**
 RL: MOA (Modifier or additive use); TEM (Technical or engineered
 material use); USES (Uses)
 (phenoxy- and tolyloxy-contg.; halogen-free
 fire-resistant resin compns. contg. phosphazenes and
 fireproofing aids for moldings)
- IT **Sulfonic acids, uses**
 RL: MOA (Modifier or additive use); TEM (Technical or engineered
 material use); USES (Uses)
 (salts, fireproofing aid; halogen-
 free fire-resistant resin compns. contg.
 phosphazenes and fireproofing aids for moldings)
- IT **Group IVA element compounds**
 RL: MOA (Modifier or additive use); TEM (Technical or engineered
 material use); USES (Uses)
 (stannates, fireproofing aid; halogen-
 free fire-resistant resin compns. contg.
 phosphazenes and fireproofing aids for moldings)
- IT **Cyclophosphazenes**

RL: MOA (Modifier or additive use); TEM (Technical or engineered material use); USES (Uses)
 (tolyloxy-contg.; **halogen-free fire**-resistant resin compns. contg. phosphazenes and **fireproofing aids for moldings**)

IT 14807-96-6, Talc, uses
 RL: MOA (Modifier or additive use); TEM (Technical or engineered material use); USES (Uses)
 (Talc 3A, filler; **halogen-free fire**-resistant resin compns. contg. phosphazenes and **fireproofing aids for moldings**)

IT 9003-53-6, Polystyrene
 RL: POF (Polymer in formulation); TEM (Technical or engineered material use); USES (Uses)
 (Toyo Styrol G 19; **halogen-free fire**-resistant resin compns. contg. phosphazenes and **fireproofing aids for moldings**)

IT 9002-84-0, Polytetrafluoroethylene
 RL: MOA (Modifier or additive use); TEM (Technical or engineered material use); USES (Uses)
 (antidripping agent; **halogen-free fire**-resistant resin compns. contg. phosphazenes and **fireproofing aids for moldings**)

IT 6683-19-8, Irganox 1010
 RL: MOA (Modifier or additive use); TEM (Technical or engineered material use); USES (Uses)
 (antioxidant; **halogen-free fire**-resistant resin compns. contg. phosphazenes and **fireproofing aids for moldings**)

IT 25037-45-0 25134-01-4
 RL: MOA (Modifier or additive use); POF (Polymer in formulation); TEM (Technical or engineered material use); USES (Uses)
 (assumed monomers, base resin, **fireproofing aid**; **halogen-free fire**-resistant resin compns. contg. phosphazenes and **fireproofing aids for moldings**)

IT 25718-70-1
 RL: MOA (Modifier or additive use); TEM (Technical or engineered material use); USES (Uses)
 (assumed monomers, **fireproofing aid**; **halogen-free fire**-resistant resin compns. contg. phosphazenes and **fireproofing aids for moldings**)

IT 26062-94-2, Poly(butylene terephthalate)
 RL: POF (Polymer in formulation); TEM (Technical or engineered material use); USES (Uses)
 (assumed monomers; **halogen-free fire**-resistant resin compns. contg. phosphazenes and **fireproofing aids for moldings**)

IT 24936-68-3, Panlite L 1225, uses
 RL: MOA (Modifier or additive use); POF (Polymer in formulation); TEM (Technical or engineered material use); USES (Uses)
 (base resin, Panlite L 1225, **fireproofing aid**, Iupilon S; **halogen-free fire**-resistant resin compns. contg. phosphazenes and **fireproofing aids for moldings**)

IT 24938-67-8, YPX 100F

- RL: MOA (Modifier or additive use); POF (Polymer in formulation);
 TEM (Technical or engineered material use); USES (Uses)
 (base resin, fireproofing aid; halogen-free fire-resistant resin compns. contg.
 phosphazenes and fireproofing aids for moldings)
- IT 9059-69-2, Butanediol-isophthalic acid-terephthalic acid copolymer
 RL: POF (Polymer in formulation); TEM (Technical or engineered material use); USES (Uses)
 (comprised of actual and assumed monomers; halogen-free fire-resistant resin compns. contg.
 phosphazenes and fireproofing aids for moldings)
- IT 471-34-1, Whiton P 30, uses 11097-59-9, DHT 4A
 RL: MOA (Modifier or additive use); TEM (Technical or engineered material use); USES (Uses)
 (filler; halogen-free fire-resistant resin compns. contg. phosphazenes and fireproofing aids for moldings)
- IT 108-78-1D, Melamine, polyphosphoric acid salts 496-46-8,
 Acetyleneurea 1309-42-8, Kisuma 5E 1502-47-2D, Melem,
 polyphosphoric acid salts 3576-88-3D, Melam, polyphosphoric acid salts 7757-93-9, Calcium monohydrogenphosphate 9003-53-6D,
 Polystyrene, sulfonated, sodium salt 12008-25-2, Fire Brake 415 12767-90-7, Fire Brake ZB 24979-70-2, Maruka Lyncur MS 1P 25068-38-6, Pheno Tohto YP 50 25212-74-2,
 Poly(1,4-phenylene) sulfide 25805-74-7, Reny 6002 26590-50-1, Polarylate U 100 26834-02-6, Milex XL 225 27988-97-2D, Tetrazole, compds. 37640-57-6, MC 610 39281-59-9 87912-90-1, EPPN 113089-04-6, 1,4-Piperazinediyltetra-2,6-xylyl phosphate 117313-45-8, Epikote 1004K 139189-30-3, PX 200 172827-17-7, PR 53647 176316-86-2, Aluminum ethylmethylphosphinate 218768-84-4, Melapur 200 243144-78-7, PMP 100 380366-74-5, PMP 200
 RL: MOA (Modifier or additive use); TEM (Technical or engineered material use); USES (Uses)
 (fireproofing aid; halogen-free fire-resistant resin compns. contg. phosphazenes and fireproofing aids for moldings)
- IT 27122-73-2, Hexakis(p-tolylloxy)cyclotriphosphazene)
 RL: MOA (Modifier or additive use); TEM (Technical or engineered material use); USES (Uses)
 (halogen-free fire-resistant resin compns. contg. phosphazenes and fireproofing aids for moldings)
- IT 9003-54-7, Cevian NJD 9003-56-9, Cevian VDP 611 24968-12-5, Duranex 25038-54-4, UBE Nylon 6, uses 25038-59-9, Bellpet EFG 10, uses 25822-54-2, Rodrun LC 3000 81843-52-9, Vectra A 950
 RL: POF (Polymer in formulation); TEM (Technical or engineered material use); USES (Uses)
 (halogen-free fire-resistant resin compns. contg. phosphazenes and fireproofing aids for moldings)
- IT 80-05-7, Bisphenol A, uses 108-46-3, Resorcinol, uses
 RL: MOA (Modifier or additive use); TEM (Technical or engineered material use); USES (Uses)

(phosphazenes crosslinked with; **halogen-free fire-resistant resin compns.** contg. phosphazenes and **fireproofing aids for moldings**)

IT 7723-14-0, Nova Excel 140, uses
 RL: MOA (Modifier or additive use); TEM (Technical or engineered material use); USES (Uses)
 (red, **fireproofing aid; halogen-free fire-resistant resin compns.** contg. phosphazenes and **fireproofing aids for moldings**)

IT 38613-77-3, P-EPQ 80693-00-1, ADK Stab PEP 36
 RL: MOA (Modifier or additive use); TEM (Technical or engineered material use); USES (Uses)
 (stabilizer; **halogen-free fire-resistant resin compns.** contg. phosphazenes and **fireproofing aids for moldings**)

IT 26062-94-2, Poly(butylene terephthalate)
 RL: POF (Polymer in formulation); TEM (Technical or engineered material use); USES (Uses)
 (assumed monomers; **halogen-free fire-resistant resin compns.** contg. phosphazenes and **fireproofing aids for moldings**)

RN 26062-94-2 HCAPLUS

CN 1,4-Benzenedicarboxylic acid, polymer with 1,4-butanediol (9CI) (CA INDEX NAME)

CM 1

CRN 110-63-4

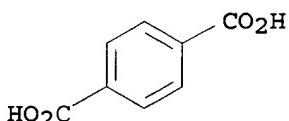
CMF C4 H10 O2

HO—(CH₂)₄—OH

CM 2

CRN 100-21-0

CMF C8 H6 O4



IT 9059-69-2, Butanediol-isophthalic acid-terephthalic acid copolymer

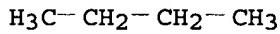
RL: POF (Polymer in formulation); TEM (Technical or engineered material use); USES (Uses)
 (comprised of actual and assumed monomers; **halogen-free fire-resistant resin compns.** contg. phosphazenes and **fireproofing aids for moldings**)

RN 9059-69-2 HCAPLUS

CN 1,3-Benzenedicarboxylic acid, polymer with 1,4-benzenedicarboxylic acid and butanediol (9CI) (CA INDEX NAME)

CM 1

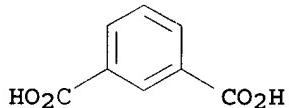
CRN 25265-75-2
CMF C4 H10 O2
CCI IDS



2 (D1-OH)

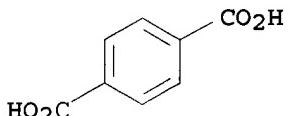
CM 2

CRN 121-91-5
CMF C8 H6 O4



CM 3

CRN 100-21-0
CMF C8 H6 O4



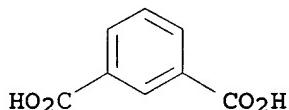
IT 26590-50-1, Polyarylate U 100 139189-30-3, PX 200
RL: MOA (Modifier or additive use); TEM (Technical or engineered material use); USES (Uses)
(fireproofing aid; halogen-free
fire-resistant resin compns. contg. phosphazenes and
fireproofing aids for moldings)

RN 26590-50-1 HCPLUS

CN 1,3-Benzenedicarboxylic acid, polymer with 1,4-benzenedicarboxylic acid and 4,4'-(1-methylethylidene)bis[phenol] (9CI) (CA INDEX NAME)

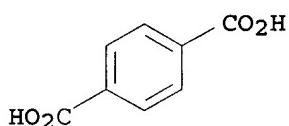
CM 1

CRN 121-91-5
CMF C8 H6 O4



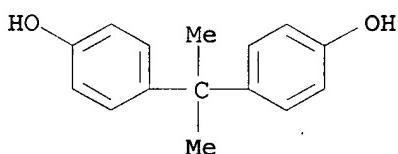
CM 2

CRN 100-21-0
CMF C8 H6 O4

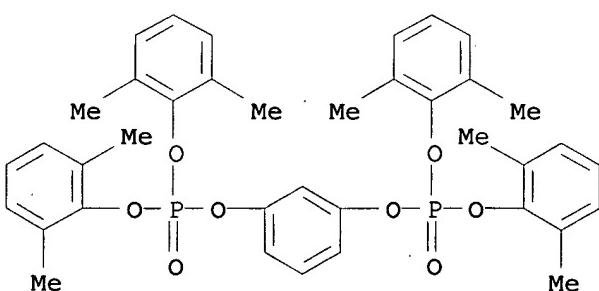


CM 3

CRN 80-05-7
CMF C15 H16 O2



RN 139189-30-3 HCPLUS
CN Phosphoric acid, 1,3-phenylene tetrakis(2,6-dimethylphenyl) ester
(9CI) (CA INDEX NAME)



IT 9003-54-7, Cevian NJD 9003-56-9, Cevian VDP 611

24968-12-5, Duranex **25038-59-9**, Bellpet EFG 10,
 uses **25822-54-2**, Rodrun LC 3000 **81843-52-9**,
 Vectra A 950
 RL: POF (Polymer in formulation); TEM (Technical or engineered
 material use); USES (Uses)
 (halogen-free fire-resistant resin
 compns. contg. phosphazenes and fireproofing aids for
 moldings)

RN 9003-54-7 HCAPLUS

CN 2-Propenenitrile, polymer with ethenylbenzene (9CI) (CA INDEX NAME)

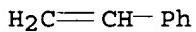
CM 1

CRN 107-13-1
 CMF C3 H3 N



CM 2

CRN 100-42-5
 CMF C8 H8



RN 9003-56-9 HCAPLUS
 CN 2-Propenenitrile, polymer with 1,3-butadiene and ethenylbenzene
 (9CI) (CA INDEX NAME)

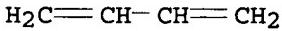
CM 1

CRN 107-13-1
 CMF C3 H3 N



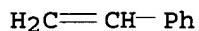
CM 2

CRN 106-99-0
 CMF C4 H6

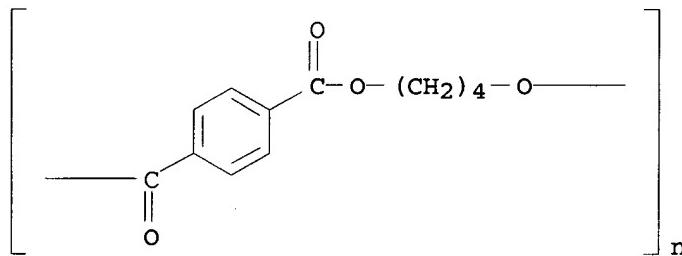


CM 3

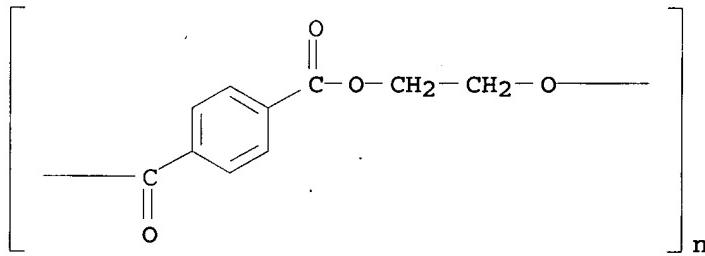
CRN 100-42-5
 CMF C8 H8



RN 24968-12-5 HCPLUS
 CN Poly(oxy-1,4-butanediylloxycarbonyl-1,4-phenylenecarbonyl) (9CI) (CA INDEX NAME)



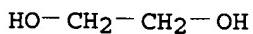
RN 25038-59-9 HCPLUS
 CN Poly(oxy-1,2-ethanediylloxycarbonyl-1,4-phenylenecarbonyl) (9CI) (CA INDEX NAME)



RN 25822-54-2 HCPLUS
 CN 1,4-Benzenedicarboxylic acid, polymer with 1,2-ethanediol and 4-hydroxybenzoic acid (9CI) (CA INDEX NAME)

CM 1

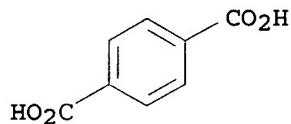
CRN 107-21-1
 CMF C2 H6 O2



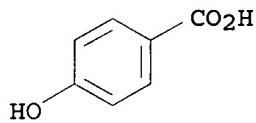
CM 2

CRN 100-21-0

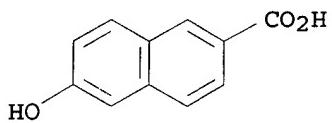
CMF C8 H6 O4



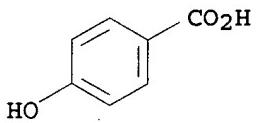
CM 3

CRN 99-96-7
CMF C7 H6 O3RN 81843-52-9 HCAPLUS
CN 2-Naphthalene carboxylic acid, 6-hydroxy-, polymer with
4-hydroxybenzoic acid (9CI) (CA INDEX NAME)

CM 1

CRN 16712-64-4
CMF C11 H8 O3

CM 2

CRN 99-96-7
CMF C7 H6 O3L50 ANSWER 9 OF 35 HCAPLUS COPYRIGHT 2005 ACS on STN
AN 2003:628029 HCAPLUS
DN 139:181087

TI Halogen-free fire-resistant polymer
 compositions, their manufacture, and their moldings
 IN Harashina, Hatsuhiro
 PA Polyplastics Co., Ltd., Japan
 SO Jpn. Kokai Tokkyo Koho, 38 pp.
 CODEN: JKXXAF
 DT Patent
 LA Japanese
 FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 2003226818	A2	20030815	JP 2002-348568	200211 29

PRAI JP 2001-368007 A 20011130
 AB The compns. comprise (A) base polymers, (B) ≥1 fireproofing agent chosen from (a) composite salts of amino-contg. N compds. and polyphosphoric acid, (b) salts of amino-contg. N compds. and polymetaphosphoric acid, (c) polyphosphoric acid amides, (d) salts of amino-contg. N compds. with sulfuric acid, pyrosulfuric acid, org. sulfonic acids, org. phosphonic acids, or org. phosphinic acids, and (e) cyclic urea compds., and (C) ≥1 fireproofing aid chosen from (f) P compds., (g) arom. polymers, and (h) inorg. acid metal salts. Thus, a compn. contg. Duranex (polybutylene terephthalate) 100, Apinon 901 (melamine sulfate) 30, PX 200 [resorcinol bis(di-2,6-xylylphosphate)] 20, Irganox 1010 [pentaerythritol tetrakis[3-(3,5-di-tert-butyl-4-hydroxyphenyl)propionate]] 0.5, calcium carbonate 2, bisphenol A diglycidyl ether 2, PTFE 1, and glass chopped strand 30 parts was injection-molded to give a test piece showing UL-94 rating V-0 and good moldability.

IC ICM C08L101-00
 ICS C08J005-00; C08K003-24; C08K005-16; C08K005-49
 CC 38-3 (Plastics Fabrication and Uses)
 Section cross-reference(s): 37, 76
 ST fireproofing molding polybutylene terephthalate polyester melamine sulfate; resorcinol xylylphosphate pentaerythritol butyl hydroxyphenyl propionate antioxidant; calcium carbonate bisphenol glycidyl stabilizer PTFE fireproofing

IT Polyamides, uses
 RL: POF (Polymer in formulation); TEM (Technical or engineered material use); USES (Uses)
 (Celanese Nylon 66; halogen-free fire-resistant polymer compns.)

IT Zeolite 3A
 RL: MOA (Modifier or additive use); TEM (Technical or engineered material use); USES (Uses)
 (Zeolium A 3, stabilizer; halogen-free fire-resistant polymer compns.)

IT Polyphosphoric acids
 RL: MOA (Modifier or additive use); TEM (Technical or engineered material use); USES (Uses)
 (amides, fireproofing agents; halogen-free fire-resistant polymer compns.)

IT Fluoropolymers, uses

RL: MOA (Modifier or additive use); TEM (Technical or engineered material use); USES (Uses)
 (antidripping agent; **halogen-free fire-resistant polymer compns.**)

IT Fluoropolymers, uses
 RL: MOA (Modifier or additive use); TEM (Technical or engineered material use); USES (Uses)
 (antidripping agents; **halogen-free fire-resistant polymer compns.**)

IT Epoxy resins, uses
 RL: MOA (Modifier or additive use); TEM (Technical or engineered material use); USES (Uses)
 (arom. epoxy resins, **fireproofing aids; halogen-free fire-resistant polymer compns.**)

IT Polyesters, uses
 RL: MOA (Modifier or additive use); TEM (Technical or engineered material use); USES (Uses)
 (arom., **fireproofing aid; halogen-free fire-resistant polymer compns.**)

IT Polyamides, uses
 RL: MOA (Modifier or additive use); TEM (Technical or engineered material use); USES (Uses)
 (arom., **fireproofing aids; halogen-free fire-resistant polymer compns.**)

IT Polycarbonates, uses
 RL: MOA (Modifier or additive use); POF (Polymer in formulation); TEM (Technical or engineered material use); USES (Uses)
 (base polymer, **fireproofing aid; halogen-free fire-resistant polymer compns.**)

IT Polyoxyphenylenes
 RL: MOA (Modifier or additive use); POF (Polymer in formulation); TEM (Technical or engineered material use); USES (Uses)
 (base polymers, **fireproofing aids; halogen-free fire-resistant polymer compns.**)

IT Phenoxy resins
 Polythiophenylenes
 RL: MOA (Modifier or additive use); TEM (Technical or engineered material use); USES (Uses)
 (**fireproofing aids; halogen-free fire-resistant polymer compns.**)

IT Electric apparatus
 Fire-resistant materials
 Fireproofing agents
 Machinery parts
 Stabilizing agents
 (**halogen-free fire-resistant polymer compns.**)

IT Polyamides, uses
 Polyesters, uses
 Polyolefins
 RL: POF (Polymer in formulation); TEM (Technical or engineered material use); USES (Uses)
 (**halogen-free fire-resistant polymer compns.**)

IT Molded plastics, uses
 RL: TEM (Technical or engineered material use); USES (Uses)

(halogen-free fire-resistant polymer compns.)

IT Antioxidants
 (hindered phenols; halogen-free fire-resistant polymer compns.)

IT Phenols, uses
 RL: MOA (Modifier or additive use); TEM (Technical or engineered material use); USES (Uses)
 (hindered, antioxidants; halogen-free fire-resistant polymer compns.)

IT Phenolic resins, uses
 RL: MOA (Modifier or additive use); TEM (Technical or engineered material use); USES (Uses)
 (novolak, fireproofing aids; halogen-free fire-resistant polymer compns.)

IT Automobiles
 (parts; halogen-free fire-resistant polymer compns.)

IT Phosphazenes
 RL: MOA (Modifier or additive use); TEM (Technical or engineered material use); USES (Uses)
 (phenoxy, fireproofing aid; halogen-free fire-resistant polymer compns.)

IT Vinyl compounds, uses
 RL: POF (Polymer in formulation); TEM (Technical or engineered material use); USES (Uses)
 (polymers; halogen-free fire-resistant polymer compns.)

IT Polycarbodiimides
 RL: MOA (Modifier or additive use); RCT (Reactant); TEM (Technical or engineered material use); RACT (Reactant or reagent); USES (Uses)
 (reactive stabilizers; halogen-free fire-resistant polymer compns.)

IT Polyphosphates
 RL: MOA (Modifier or additive use); TEM (Technical or engineered material use); USES (Uses)
 (salts, fireproofing agents; halogen-free fire-resistant polymer compns.)

IT 32131-17-2, Nylon 66, uses
 RL: POF (Polymer in formulation); TEM (Technical or engineered material use); USES (Uses)
 (Celanese Nylon 66; halogen-free fire-resistant polymer compns.)

IT 9002-84-0, Polytetrafluoroethylene
 RL: MOA (Modifier or additive use); TEM (Technical or engineered material use); USES (Uses)
 (antidripping agent; halogen-free fire-resistant polymer compns.)

IT 6683-19-8, Irganox 1010
 RL: MOA (Modifier or additive use); TEM (Technical or engineered material use); USES (Uses)
 (antioxidant; halogen-free fire-resistant polymer compns.)

IT 25037-45-0
 RL: MOA (Modifier or additive use); POF (Polymer in formulation); TEM (Technical or engineered material use); USES (Uses)

- (assumed monomers, base polymer, fireproofing aid; halogen-free fire-resistant polymer compns.)
- IT 25718-70-1
 RL: MOA (Modifier or additive use); TEM (Technical or engineered material use); USES (Uses)
 (assumed monomers, fireproofing aid; halogen-free fire-resistant polymer compns.)
- IT 26062-94-2 30580-17-7, 1,4-Butanediol-isophthalic acid terephthalic acid copolymer
 RL: POF (Polymer in formulation); TEM (Technical or engineered material use); USES (Uses)
 (assumed monomers; halogen-free fire-resistant polymer compns.)
- IT 24936-68-3, Panlite L 1225, uses
 RL: MOA (Modifier or additive use); POF (Polymer in formulation); TEM (Technical or engineered material use); USES (Uses)
 (base polymer, fireproofing aid; halogen-free fire-resistant polymer compns.)
- IT 69-93-2, Uric acid, uses 496-46-8, Acetylene urea 41583-09-9, Melamine phosphate 80128-63-8 84962-53-8, Apinon 901 259826-33-0 364728-71-2, MMS 200 380366-74-5, PMP 200 577965-25-4
 RL: MOA (Modifier or additive use); TEM (Technical or engineered material use); USES (Uses)
 (fireproofing agent; halogen-free fire-resistant polymer compns.)
- IT 7757-93-9, Calcium monohydrogen phosphate 12767-90-7, Firebrake ZB 25068-38-6, Pheno Toho YP 50 25805-74-7, Reny 6002 26590-50-1, U 100 31870-48-1, CR 741 34670-63-8 39281-59-9 70785-76-1 99208-50-1 113089-04-6 124784-27-6, PX 201 139189-30-3, PX 200 147263-99-8, PX 202 172827-17-7, Sumilit PR 53647 176316-86-2, Aluminum ethylmethylphosphinate
 RL: MOA (Modifier or additive use); TEM (Technical or engineered material use); USES (Uses)
 (fireproofing aid; halogen-free fire-resistant polymer compns.)
- IT 9003-54-7, Cevian N JD 24968-12-5, Duranex 25038-54-4, Ube Nylon 6, uses 25038-59-9, Bellpet EFG 10, uses 55097-77-3
 RL: POF (Polymer in formulation); TEM (Technical or engineered material use); USES (Uses)
 (halogen-free fire-resistant polymer compns.)
- IT 1675-54-3, Bisphenol A diglycidyl ether 142627-97-2, OXT 121 191234-32-9, Carbodilite HMV 8CA 537041-66-0, Epocros RAS 1020
 RL: MOA (Modifier or additive use); RCT (Reactant); TEM (Technical or engineered material use); RACT (Reactant or reagent); USES (Uses)
 (reactive stabilizer; halogen-free fire-resistant polymer compns.)
- IT 7723-14-0, Nova Excel 140, uses
 RL: MOA (Modifier or additive use); TEM (Technical or engineered material use); USES (Uses)
 (red, fireproofing aid; halogen-free fire-resistant polymer compns.)

IT 471-34-1, Calcium carbonate, uses 1309-42-8, Magnesium hydroxide
 11097-59-9, DHT 4A 80693-00-1, ADK Stab PEP 36 153550-59-5,
 Sandostab P-EPQ

RL: MOA (Modifier or additive use); TEM (Technical or engineered
 material use); USES (Uses)
 (stabilizer; halogen-free fire
 -resistant polymer compns.)

IT 26062-94-2 30580-17-7, 1,4-Butanediol-isophthalic
 acid terephthalic acid copolymer

RL: POF (Polymer in formulation); TEM (Technical or engineered
 material use); USES (Uses)
 (assumed monomers; halogen-free fire
 -resistant polymer compns.)

RN 26062-94-2 HCPLUS

CN 1,4-Benzenedicarboxylic acid, polymer with 1,4-butanediol (9CI) (CA
 INDEX NAME)

CM 1

CRN 110-63-4

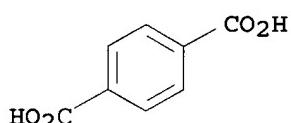
CMF C4 H10 O2

HO-(CH2)4-OH

CM 2

CRN 100-21-0

CMF C8 H6 O4



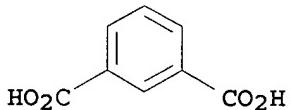
RN 30580-17-7 HCPLUS

CN 1,3-Benzenedicarboxylic acid, polymer with 1,4-benzenedicarboxylic
 acid and 1,4-butanediol (9CI) (CA INDEX NAME)

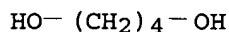
CM 1

CRN 121-91-5

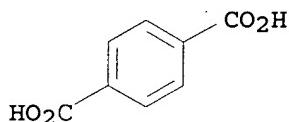
CMF C8 H6 O4



CM 2

CRN 110-63-4
CMF C4 H10 O2

CM 3

CRN 100-21-0
CMF C8 H6 O4

IT 26590-50-1, U 100 139189-30-3, PX 200

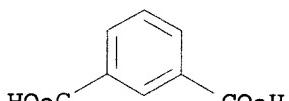
RL: MOA (Modifier or additive use); TEM (Technical or engineered material use); USES (Uses)

(fireproofing aid; halogen-free fire-resistant polymer compns.)

RN 26590-50-1 HCPLUS

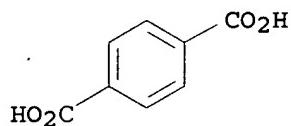
CN 1,3-Benzenedicarboxylic acid, polymer with 1,4-benzenedicarboxylic acid and 4,4'-(1-methylethylidene)bis[phenol] (9CI) (CA INDEX NAME)

CM 1

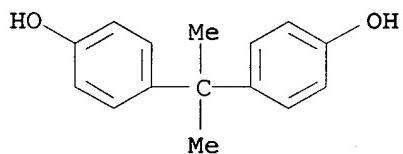
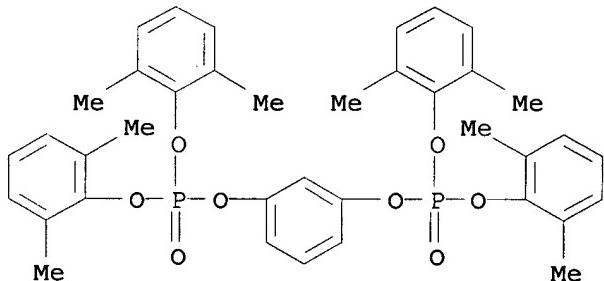
CRN 121-91-5
CMF C8 H6 O4

CM 2

CRN 100-21-0
CMF C8 H6 O4



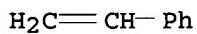
CM 3

CRN 80-05-7
CMF C15 H16 O2RN 139189-30-3 HCPLUS
CN Phosphoric acid, 1,3-phenylene tetrakis(2,6-dimethylphenyl) ester
(9CI) (CA INDEX NAME)IT 9003-54-7, Cevian N JD 24968-12-5, Duranex
25038-59-9, Bellpet EFG 10, uses
RL: POF (Polymer in formulation); TEM (Technical or engineered
material use); USES (Uses)
(halogen-free fire-resistant
polymer compns.)
RN 9003-54-7 HCPLUS
CN 2-Propenenitrile, polymer with ethenylbenzene (9CI) (CA INDEX NAME)

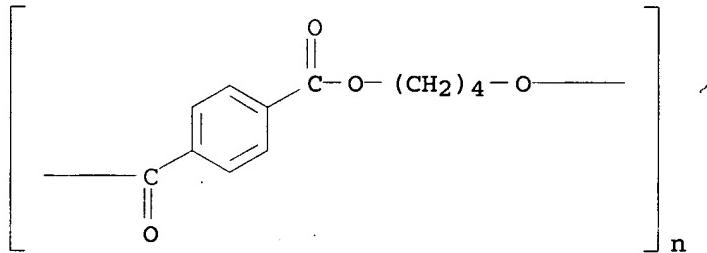
CM 1

CRN 107-13-1
CMF C3 H3 N

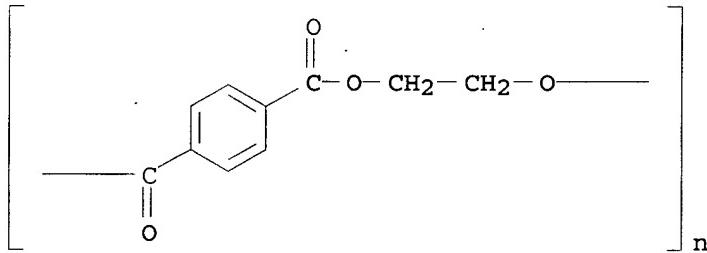
CM 2

CRN 100-42-5
CMF C8 H8

RN 24968-12-5 HCAPLUS
 CN Poly(oxy-1,4-butanediylloxycarbonyl-1,4-phenylene carbonyl) (9CI) (CA
 INDEX NAME)

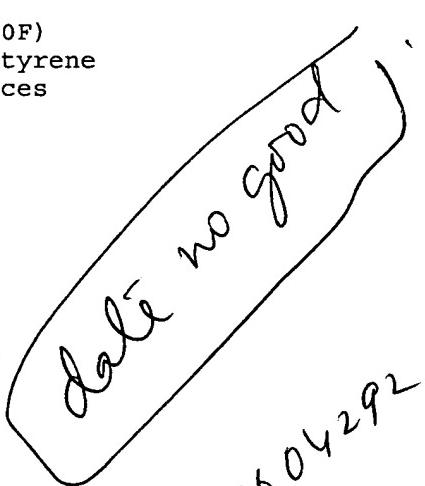


RN 25038-59-9 HCAPLUS
 CN Poly(oxy-1,2-ethanediylloxycarbonyl-1,4-phenylene carbonyl) (9CI) (CA
 INDEX NAME)



L50 ANSWER 10 OF 35 HCAPLUS COPYRIGHT 2005 ACS on STN
 AN 2003:434669 HCAPLUS
 DN 139:7695
 TI Flame-retardant resin composition and molded products
 therefrom
 IN Harashina, Hatsuhiiko; Yamada, Shinya
 PA Polymaterials Co., Ltd., Japan
 SO PCT Int. Appl., 100 pp.
 CODEN: PIXXD2
 DT Patent
 LA Japanese
 FAN.CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI WO 2003046085	A1	20030605	WO 2002-JP12406	200211 28
W: CN, JP, US RW: AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, SK, TR				
EP 1486536	A1	20041215	EP 2002-785952	200211 28
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, FI, CY, TR, BG, CZ, EE, SK				
US 2005004292	A1	20050106	US 2004-496183	200405 20
PRAI JP 2001-368004	A	20011130		
WO 2002-JP12406	W	20021128		
AB A flame-retardant resin compn. comprises (A) a base resin; (B) a flame retardant contg. ≥ 1 arom. resin (B1) selected among polyphenylene oxide resins and polyphenylene sulfide resins, a phosphoric ester (B2), and a nitrogenous cyclic compd. (B3); and (C) a styrene resin having a melt flow rate of 8 g/10 min or lower. The base resin may be a polyester resin. The styrene resin may be one having a melt flow rate of 0.1 to 5 g/10 min. The phosphoric ester (B2) may be a fused phosphoric ester, and the nitrogenous cyclic compd. (B3) may be a polyphosphoric acid salt of an aminated triazine compd., a polyphosphoramide, etc. The flame-retardant resin compn. has been flameproofed without using any halogenated flame retardant . A compn. contained PBT (Duranex) 100, Poly(1,4-phenylene oxide) (YPX 100F) 30, resorcinol bis(di-2,6-xylénol phosphate) (PX200) 40, polystyrene 10, glass fiber 80, and Irganox 1010 0.8 part, giving test pieces with UL94 burning rating V-1, no dripping, and good blooming resistance.				
IC ICM C08L101-00				
CC 37-6 (Plastics Manufacture and Processing) Section cross-reference(s): 38				
ST flame retardant resin compn molded product; PBT polyoxyphenylene polystyrene phosphate fire resistant material				
IT Polyesters, uses RL: POF (Polymer in formulation); TEM (Technical or engineered material use); USES (Uses) (Bellpet EFG10; halo-free flame -retardant resin compn. and molded products therefrom)				
IT Polyoxyphenylenes Polythiophenylenes RL: MOA (Modifier or additive use); USES (Uses) (fireproofing agent; halo-free flame-retardant resin compn. and molded products therefrom)				
IT Electric apparatus Fire-resistant materials Fireproofing agents				


 Some US 2005 0604292
 Hanadine et al

- (halo-free flame-retardant resin
compn. and molded products therefrom)
- IT Molded plastics, properties
 - RL: POF (Polymer in formulation); PRP (Properties); USES (Uses)
 - (halo-free flame-retardant resin
compn. and molded products therefrom)
- IT Acrylic polymers, uses
 - RL: POF (Polymer in formulation); TEM (Technical or engineered material use); USES (Uses)
 - (halo-free flame-retardant resin
compn. and molded products therefrom)
- IT Polyamides, uses
 - RL: POF (Polymer in formulation); TEM (Technical or engineered material use); USES (Uses)
 - (halo-free flame-retardant resin
compn. and molded products therefrom)
- IT Polycarbonates, uses
 - RL: POF (Polymer in formulation); TEM (Technical or engineered material use); USES (Uses)
 - (halo-free flame-retardant resin
compn. and molded products therefrom)
- IT Polyesters, uses
 - RL: POF (Polymer in formulation); TEM (Technical or engineered material use); USES (Uses)
 - (halo-free flame-retardant resin
compn. and molded products therefrom)
- IT Polyolefins
 - RL: POF (Polymer in formulation); TEM (Technical or engineered material use); USES (Uses)
 - (halo-free flame-retardant resin
compn. and molded products therefrom)
- IT Polyphosphoric acids
 - RL: MOA (Modifier or additive use); USES (Uses)
 - (meta-, melamine salt; halo-free
flame-retardant resin compn. and molded products
therefrom)
- IT Automobiles
 - (parts; halo-free flame-retardant
resin compn. and molded products therefrom)
- IT Phosphazenes
 - RL: MOA (Modifier or additive use); USES (Uses)
 - (phenoxy, flame retardant; halo-free
flame-retardant resin compn. and molded products
therefrom)
- IT Vinyl compounds, uses
 - RL: POF (Polymer in formulation); TEM (Technical or engineered material use); USES (Uses)
 - (polymers; halo-free flame
-retardant resin compn. and molded products therefrom)
- IT 5945-33-5, Bisphenol A bis(diphenylphosphate)
 - RL: MOA (Modifier or additive use); USES (Uses)
 - (Adekastab FP700, flame retardant; halo-
free flame-retardant resin compn. and molded
products therefrom)
- IT 84962-53-8, Apinon 901
 - RL: MOA (Modifier or additive use); USES (Uses)

- (Apinon 901, **flame retardant; halo-free flame-retardant resin compn.** and molded products therefrom)
- IT 25038-59-9, Bellpet EFG10, uses
 RL: POF (Polymer in formulation); TEM (Technical or engineered material use); USES (Uses)
 (Bellpet EFG10; **halo-free flame-retardant resin compn.** and molded products therefrom)
- IT 24968-12-5, Duranex
 RL: POF (Polymer in formulation); TEM (Technical or engineered material use); USES (Uses)
 (Duranex; **halo-free flame-retardant resin compn.** and molded products therefrom)
- IT 37640-57-6, MC610
 RL: MOA (Modifier or additive use); USES (Uses)
 (MC610, **flame retardant; halo-free flame-retardant resin compn.** and molded products therefrom)
- IT 139189-30-3, PX200
 RL: MOA (Modifier or additive use); USES (Uses)
 (PX200, **flame retardant; halo-free flame-retardant resin compn.** and molded products therefrom)
- IT 124784-27-6, PX201
 RL: MOA (Modifier or additive use); USES (Uses)
 (PX201, **flame retardant; halo-free flame-retardant resin compn.** and molded products therefrom)
- IT 147263-99-8, PX202
 RL: MOA (Modifier or additive use); USES (Uses)
 (PX202, **flame retardant; halo-free flame-retardant resin compn.** and molded products therefrom)
- IT 24938-67-8, YPX100F
 RL: MOA (Modifier or additive use); USES (Uses)
 (YPX100F, **flame retardant; halo-free flame-retardant resin compn.** and molded products therefrom)
- IT 26062-94-2, Butanediol-terephthalic acid copolymer
 RL: POF (Polymer in formulation); TEM (Technical or engineered material use); USES (Uses)
 (assumed monomers; **halo-free flame-retardant resin compn.** and molded products therefrom)
- IT 25212-74-2, Poly(1,4-phenylene sulfide) 33411-63-1, Thiophenol polymer 34670-63-8 66813-75-0, Sumisafe PM 218768-84-4, Melapur 200 380366-74-5, PMP200
 RL: MOA (Modifier or additive use); USES (Uses)
 (**flame retardant; halo-free flame-retardant resin compn.** and molded products therefrom)
- IT 25134-01-4, 2,6-Dimethylphenol polymer
 RL: MOA (Modifier or additive use); USES (Uses)
 (**halo-free flame-retardant resin compn.** and molded products therefrom)
- IT 9003-53-6, Polystyrene 9003-54-7, Acrylonitrile-styrene copolymer 9003-56-9, ABS polymer

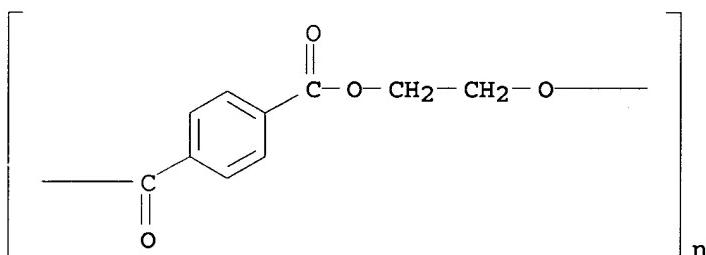
RL: POF (Polymer in formulation); TEM (Technical or engineered material use); USES (Uses)
 (halo-free flame-retardant resin
 compn. and molded products therefrom)

IT 25038-59-9, Bellpet EFG10, uses

RL: POF (Polymer in formulation); TEM (Technical or engineered material use); USES (Uses)
 (Bellpet EFG10; halo-free flame
 -retardant resin compn. and molded products therefrom)

RN 25038-59-9 HCPLUS

CN Poly(oxy-1,2-ethanediylloxycarbonyl-1,4-phenylene carbonyl) (9CI) (CA INDEX NAME)

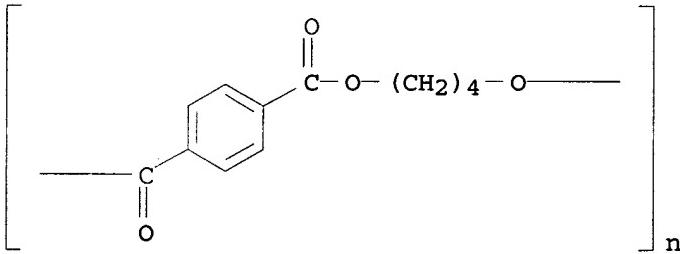


IT 24968-12-5, Duranex

RL: POF (Polymer in formulation); TEM (Technical or engineered material use); USES (Uses)
 (Duranex; halo-free flame-retardant
 resin compn. and molded products therefrom)

RN 24968-12-5 HCPLUS

CN Poly(oxy-1,4-butanediylloxycarbonyl-1,4-phenylene carbonyl) (9CI) (CA INDEX NAME)

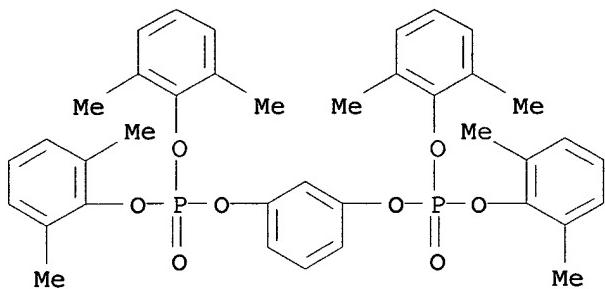


IT 139189-30-3, PX200

RL: MOA (Modifier or additive use); USES (Uses)
 (PX200, flame retardant; halo-free
 flame-retardant resin compn. and molded products
 therefrom)

RN 139189-30-3 HCPLUS

CN Phosphoric acid, 1,3-phenylene tetrakis(2,6-dimethylphenyl) ester
 (9CI) (CA INDEX NAME)



IT 26062-94-2, Butanediol-terephthalic acid copolymer

RL: POF (Polymer in formulation); TEM (Technical or engineered material use); USES (Uses)

(assumed monomers; **halo-free flame**

-retardant resin compn. and molded products therefrom)

RN 26062-94-2 HCAPLUS

CN 1,4-Benzenedicarboxylic acid, polymer with 1,4-butanediol (9CI) (CA INDEX NAME)

CM 1

CRN 110-63-4

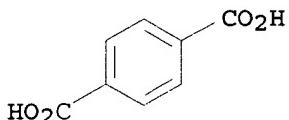
CMF C4 H10 O2

HO-(CH2)4-OH

CM 2

CRN 100-21-0

CMF C8 H6 O4



IT 9003-54-7, Acrylonitrile-styrene copolymer 9003-56-9

, ABS polymer

RL: POF (Polymer in formulation); TEM (Technical or engineered material use); USES (Uses)

(**halo-free flame**-retardant resin

compn. and molded products therefrom)

RN 9003-54-7 HCAPLUS

CN 2-Propenenitrile, polymer with ethenylbenzene (9CI) (CA INDEX NAME)

CM 1

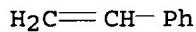
CRN 107-13-1

CMF C3 H3 N



CM 2

CRN 100-42-5
CMF C8 H8



RN 9003-56-9 HCPLUS
CN 2-Propenenitrile, polymer with 1,3-butadiene and ethenylbenzene
(9CI) (CA INDEX NAME)

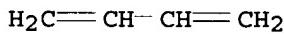
CM 1

CRN 107-13-1
CMF C3 H3 N



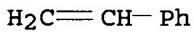
CM 2

CRN 106-99-0
CMF C4 H6



CM 3

CRN 100-42-5
CMF C8 H8



RE.CNT 11 THERE ARE 11 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L50 ANSWER 11 OF 35 HCPLUS COPYRIGHT 2005 ACS on STN
AN 2003:434668 HCPLUS
DN 139:22865
TI Flame-retardant resin composition and molded products

therefrom
 IN Harashina, Hatsuhiro
 PA Polyplastics Co., Ltd., Japan
 SO PCT Int. Appl., 114 pp.
 CODEN: PIXXD2
 DT Patent
 LA Japanese
 FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	WO 2003046084	A1	20030605	WO 2002-JP12405	200211 28
	W: CN, JP, US RW: AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, SK, TR				
	EP 1466946	A1	20041013	EP 2002-785951	200211 28
	R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, FI, CY, TR, BG, CZ, EE, SK				
	US 2004254270	A1	20041216	US 2004-493538	200404 22
PRAI	JP 2001-368005	A	20011130		
	WO 2002-JP12405	W	20021128		
AB	<p>A flame-retardant resin compn. comprises a thermoplastic resin; a flame retardant comprising a phosphorus compd., an arom. resin, and at least one flame retardant aid selected among nitrogen compds. and metal salts of inorg. acids; and ≥1 stabilization aid selected among compds. having a functional group reactive with an active hydrogen atom and water-repellent compds. The phosphorus compd. may be a phosphoric ester. The arom. resin may be a polyphenylene sulfide resin or polyphenylene oxide resin. The nitrogen compds. may be salts of an aminated triazine compd. with an oxoacid, salts of an aminated triazine compd. with a hydroxylated triazine compd., polyphosphoramides, cyclic urea compds., etc. The flame -retardant resin compn. has been flameproofed without using any halogenated flame retardant. A compn. contained PBT (Duranex) 100, resorcinol bis(di-2,6-xylenyl phosphate) (PX200) 40, Poly(1,4-phenylene oxide) (YPX 100F) 35, PMP 200 15, Epikote 828 2, glass chopped strand 80, Irganox 1010 0.8, Adekastab PEP36 0.8, and 1.3 PTFE part, giving test pieces with UL94 burning rating V-0, no dripping, good blooming resistance and tensile strength retention in water 78%.</p>				
IC	ICM C08L101-00				
CC	37-6 (Plastics Manufacture and Processing)				
	Section cross-reference(s): 38				
ST	flame retardant resin compn molded product; PBT polyoxyphenylene phosphate fire resistant material				
IT	Stabilizing agents (aid; halo-free flame-retardant resin-compn. and molded products therefrom)				
IT	Polyesters , uses				

- RL: MOA (Modifier or additive use); USES (Uses)
 (arom., assumed monomers, **flame retardant; halo-free flame-retardant resin compn.** and molded products therefrom)
- IT Fatty acids, uses
 RL: MOA (Modifier or additive use); USES (Uses)
 (branched, glycidyl ester, stabilization aid; **halo-free flame-retardant resin compn.** and molded products therefrom)
- IT **Phenolic resins**, uses
 RL: MOA (Modifier or additive use); USES (Uses)
 (epoxy, novolak, **flame retardant; halo-free flame-retardant resin compn.** and molded products therefrom)
- IT Electric apparatus
Fire-resistant materials
Fireproofing agents
 (**halo-free flame-retardant resin compn.** and molded products therefrom)
- IT Polythiophenlenes
 RL: MOA (Modifier or additive use); USES (Uses)
 (**halo-free flame-retardant resin compn.** and molded products therefrom)
- IT Molded plastics, properties
 RL: POF (Polymer in formulation); PRP (Properties); USES (Uses)
 (**halo-free flame-retardant resin compn.** and molded products therefrom)
- IT **Acrylic polymers**, uses
 RL: POF (Polymer in formulation); TEM (Technical or engineered material use); USES (Uses)
 (**halo-free flame-retardant resin compn.** and molded products therefrom)
- IT Polyamides, uses
 RL: POF (Polymer in formulation); TEM (Technical or engineered material use); USES (Uses)
 (**halo-free flame-retardant resin compn.** and molded products therefrom)
- IT Polycarbonates, uses
 RL: POF (Polymer in formulation); TEM (Technical or engineered material use); USES (Uses)
 (**halo-free flame-retardant resin compn.** and molded products therefrom)
- IT **Polyesters**, uses
 RL: POF (Polymer in formulation); TEM (Technical or engineered material use); USES (Uses)
 (**halo-free flame-retardant resin compn.** and molded products therefrom)
- IT Polyolefins
 RL: POF (Polymer in formulation); TEM (Technical or engineered material use); USES (Uses)
 (**halo-free flame-retardant resin compn.** and molded products therefrom)
- IT Polyoxyphenlenes
 RL: POF (Polymer in formulation); TEM (Technical or engineered material use); USES (Uses)
 (**halo-free flame-retardant resin**)

- compn. and molded products therefrom)
- IT Epoxy resins, uses
 RL: MOA (Modifier or additive use); USES (Uses)
 (phenolic, novolak, **flame retardant; halo-free flame-retardant resin compn.** and molded products therefrom)
- IT Phosphazenes
 RL: MOA (Modifier or additive use); USES (Uses)
 (phenoxy, **flame retardant; halo-free flame-retardant resin compn.** and molded products therefrom)
- IT Vinyl compounds, uses
 RL: POF (Polymer in formulation); TEM (Technical or engineered material use); USES (Uses)
 (polymers; **halo-free flame-retardant resin compn.** and molded products therefrom)
- IT Epoxy resins, uses
 Polysiloxanes, uses
 RL: MOA (Modifier or additive use); USES (Uses)
 (stabilization aid; **halo-free flame-retardant resin compn.** and molded products therefrom)
- IT 25068-38-6, Epikote 828
 RL: MOA (Modifier or additive use); USES (Uses)
 (Epikote 1004, stabilization aid; **halo-free flame-retardant resin compn.** and molded products therefrom)
- IT 12767-90-7, Boron zinc oxide (B6Zn2011)
 RL: MOA (Modifier or additive use); USES (Uses)
 (Firebrake ZB, **flame retardant; halo-free flame-retardant resin compn.** and molded products therefrom)
- IT 142627-97-2, 1,4-Bis[3-ethyl-3-oxyethylmethoxy]methylbenzene
 RL: MOA (Modifier or additive use); USES (Uses)
 (OXT-121, stabilization aid; **halo-free flame-retardant resin compn.** and molded products therefrom)
- IT 26590-50-1, U 100
 RL: MOA (Modifier or additive use); USES (Uses)
 (U 100; **halo-free flame-retardant resin compn.** and molded products therefrom)
- IT 25037-45-0, Bisphenol A-carbonic acid copolymer 25134-01-4, 2,6-Dimethylphenol polymer 25718-70-1, Adipic acid-m-xylylenediamine copolymer 33411-63-1, Thiophenol polymer
 RL: MOA (Modifier or additive use); USES (Uses)
 (assumed monomers, **flame retardant; halo-free flame-retardant resin compn.** and molded products therefrom)
- IT 26062-94-2, Butanediol-terephthalic acid copolymer
 RL: POF (Polymer in formulation); TEM (Technical or engineered material use); USES (Uses)
 (assumed monomers; **halo-free flame-retardant resin compn.** and molded products therefrom)
- IT 7757-93-9, Calcium monohydrogen phosphate 24936-68-3, Panlite L 1225, uses 24938-67-8, YPX 100F 25212-74-2, Poly(1,4-phenylene sulfide) 25805-74-7, Reny 6002 34670-63-8 37640-57-6, MC 610 66813-75-0, Sumisafe PM 81775-74-8, EPPN 201 84962-53-8,

Apinon 901 124784-27-6, PX 201 **139189-30-3**, PX 200
 147263-99-8, PX 202 176316-86-2, Aluminum ethylmethylphosphinate
 218768-84-4, Melapur 200 243144-78-7, PMP 100 380366-74-5, PMP
 200

RL: MOA (Modifier or additive use); USES (Uses)
 (flame retardant; **halo-free**
 flame-retardant resin compn. and molded products
 therefrom)

IT 31870-48-1, CR 741 172827-17-7, Sumilite PR 53647
 RL: MOA (Modifier or additive use); USES (Uses)
 (**halo-free** flame-retardant resin
 compn. and molded products therefrom)

IT 9003-53-6, Polystyrene **9003-54-7**, Cevian NJD **24968-12**
 -5, Duranex **25038-59-9**, Bellpet EFG 10, uses
 RL: POF (Polymer in formulation); TEM (Technical or engineered
 material use); USES (Uses)
 (**halo-free** flame-retardant resin
 compn. and molded products therefrom)

IT 9016-00-6, Dimethyl silicone 18934-00-4, OXT-221 31900-57-9,
 Dimethylsilanol polymer 34052-90-9, 2,2'-(1,3-Phenylene)-bis(2-
 oxazoline) 73666-46-3, Vestanat T1890 **116770-96-8**,
 Modiper A 4200 **117091-81-3**, Modiper A 4100
124752-62-1, Reseda GP 500 191234-32-9, Carbodilite
 HMV-8CA 537041-66-0, Epocros RAS 1020
 RL: MOA (Modifier or additive use); USES (Uses)
 (stabilization aid; **halo-free** flame
 -retardant resin compn. and molded products therefrom)

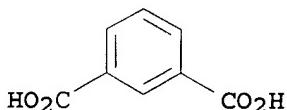
IT **26590-50-1**, U 100
 RL: MOA (Modifier or additive use); USES (Uses)
 (U 100; **halo-free** flame-retardant
 resin compn. and molded products therefrom)

RN 26590-50-1 HCAPLUS

CN 1,3-Benzenedicarboxylic acid, polymer with 1,4-benzenedicarboxylic
 acid and 4,4'-(1-methylethylidene)bis[phenol] (9CI) (CA INDEX NAME)

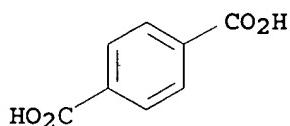
CM 1

CRN 121-91-5
 CMF C8 H6 O4

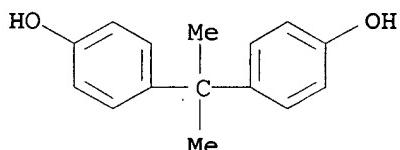


CM 2

CRN 100-21-0
 CMF C8 H6 O4



CM 3

CRN 80-05-7
CMF C15 H16 O2

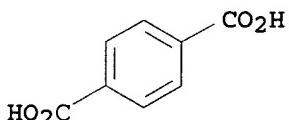
IT 26062-94-2, Butanediol-terephthalic acid copolymer
 RL: POF (Polymer in formulation); TEM (Technical or engineered material use); USES (Uses)
 (assumed monomers; **halo-free flame**
 -retardant resin compn. and molded products therefrom)

RN 26062-94-2 HCPLUS
 CN 1,4-Benzenediacrylic acid, polymer with 1,4-butanediol (9CI) (CA INDEX NAME)

CM 1

CRN 110-63-4
CMF C4 H10 O2HO—(CH₂)₄—OH

CM 2

CRN 100-21-0
CMF C8 H6 O4

IT 81775-74-8, EPPN 201 139189-30-3, PX 200
 RL: MOA (Modifier or additive use); USES (Uses)

(flame retardant; halo-free
flame-retardant resin compn. and molded products
therefrom)

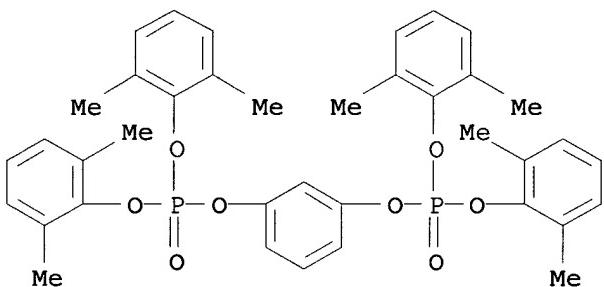
RN 81775-74-8 HCPLUS

CN EPPN 201 (9CI) (CA INDEX NAME)

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***

RN 139189-30-3 HCPLUS

CN Phosphoric acid, 1,3-phenylene tetrakis(2,6-dimethylphenyl) ester
(9CI) (CA INDEX NAME)



IT 9003-54-7, Cevian NJD 24968-12-5, Duranex

25038-59-9, Bellpet EFG 10, uses

RL: POF (Polymer in formulation); TEM (Technical or engineered
material use); USES (Uses)

(halo-free flame-retardant resin

compn. and molded products therefrom)

RN 9003-54-7 HCPLUS

CN 2-Propenenitrile, polymer with ethenylbenzene (9CI) (CA INDEX NAME)

CM 1

CRN 107-13-1

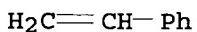
CMF C3 H3 N



CM 2

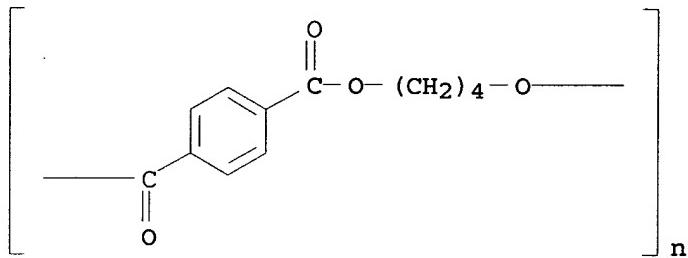
CRN 100-42-5

CMF C8 H8



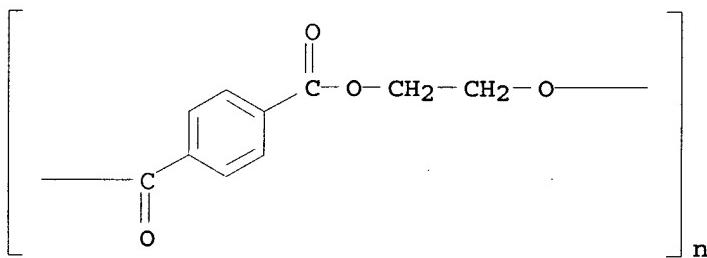
RN 24968-12-5 HCPLUS

CN Poly(oxy-1,4-butanediylloxycarbonyl-1,4-phenylenecarbonyl) (9CI) (CA
INDEX NAME)



RN 25038-59-9 HCPLUS

CN Poly(oxy-1,2-ethanediylloxycarbonyl-1,4-phenylene carbonyl) (9CI) (CA INDEX NAME)

IT 116770-96-8, Modiper A 4200 117091-81-3, Modiper A
4100 124752-62-1, Reseda GP 500RL: MOA (Modifier or additive use); USES (Uses)
(stabilization aid; **halo-free flame**
-retardant resin compn. and molded products therefrom)

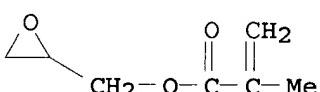
RN 116770-96-8 HCPLUS

CN 2-Propenoic acid, 2-methyl-, methyl ester, polymer with ethene and
oxiranylmethyl 2-methyl-2-propenoate, graft (9CI) (CA INDEX NAME)

CM 1

CRN 106-91-2

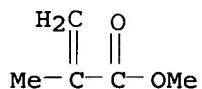
CMF C7 H10 O3



CM 2

CRN 80-62-6

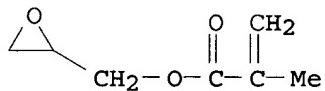
CMF C5 H8 O2



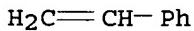
CM 3

CRN 74-85-1
CMF C2 H4RN 117091-81-3 HCPLUS
CN 2-Propenoic acid, 2-methyl-, oxiranylmethyl ester, polymer with ethene and ethenylbenzene, graft (9CI) (CA INDEX NAME)

CM 1

CRN 106-91-2
CMF C7 H10 O3

CM 2

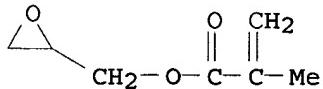
CRN 100-42-5
CMF C8 H8

CM 3

CRN 74-85-1
CMF C2 H4RN 124752-62-1 HCPLUS
CN 2-Propenoic acid, 2-methyl-, oxiranylmethyl ester, polymer with ethenylbenzene, graft (9CI) (CA INDEX NAME)

CM 1

CRN 106-91-2
CMF C7 H10 O3



CM 2

CRN 100-42-5
CMF C8 H8

H₂C=CH-Ph

RE.CNT 5 THERE ARE 5 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L50 ANSWER 12 OF 35 HCAPLUS COPYRIGHT 2005 ACS on STN
AN 2003:434667 HCAPLUS

DN 139:22864

TI Flame-retardant resin compositions
IN Harashina, Hatsuhiko; Yamada, Shinya
PA Polyplastics Co., Ltd., Japan
SO PCT Int. Appl., 70 pp.

CODEN: PIXXD2

DT Patent

LA Japanese

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
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PI	WO 2003046083	A1	20030605	WO 2002-JP12404	200211 28

W: CN, JP, US

RW: AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, IE,
IT, LU, MC, NL, PT, SE, SK, TR

EP 1452567 A1 20040901 EP 2002-785950

200211
28

R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC,
PT, IE, FI, CY, TR, BG, CZ, EE, SK

US 2004266916 A1 20041230 US 2004-496163

200405
20

PRAI JP 2001-367988 A 20011130
WO 2002-JP12404 W 20021128

AB Title compns., with dripping prevention, consist of base resins,
novolak epoxy resin surface-treating agent- or binding agent-treated
inorg. fillers, and fire retardants comprising of (a)

polyoxyphenylenes and/or polythiophenylenes 10-150, (b) phosphate esters 100, and (c) N-contg. cyclic compds. 0-100 parts (preferably). A compn. comprising Duranex 100, YPX 100F 50, PX 200 60, novolak epoxy resin-treated glass chopped strands 100, Toyo Styrol GP-G 200C 15, Irganox 1010 1.0, and PTFE 1.5 parts was molded into a test piece with UL 94 test V-0 and no dripping and no blooming after 5 h at 150°.

IC ICM C08L101-00

CC 37-6 (Plastics Manufacture and Processing)

ST polyoxyphenylene phosphate ester flame retardant resin compn dripping prevention; polythiophenylene phosphate ester flame retardant resin compn dripping prevention; novolak epoxy resin treated inorg filler fireproof resin compn

IT **Polyesters, uses**

RL: POF (Polymer in formulation); TEM (Technical or engineered material use); USES (Uses)

(Bellpet EFG; novolak epoxy resin-treated inorg. filler- and sp. flame retardant-contg. resin compns. with dripping and blooming prevention)

IT Zeolite 3A

RL: MOA (Modifier or additive use); USES (Uses)

(Zeolium A 3, stabilizer; novolak epoxy resin-treated inorg. filler- and sp. flame retardant-contg. resin compns. with dripping and blooming prevention)

IT Fatty acids, uses

RL: MOA (Modifier or additive use); USES (Uses)

(branched, glycidyl esters, stabilizers; novolak epoxy resin-treated inorg. filler- and sp. flame retardant-contg. resin compns. with dripping and blooming prevention)

IT Glass fibers, uses

RL: TEM (Technical or engineered material use); USES (Uses)

(chopped strands, novolak epoxy resin-treated; novolak epoxy resin-treated inorg. filler- and sp. flame retardant-contg. resin compns. with dripping and blooming prevention)

IT Fluoropolymers, uses

RL: MOA (Modifier or additive use); USES (Uses)

(dripping preventer; novolak epoxy resin-treated inorg. filler- and sp. flame retardant-contg. resin compns. with dripping and blooming prevention)

IT Phenolic resins, uses

RL: MOA (Modifier or additive use); USES (Uses)

(epoxy, novolak, glass fibers treated with; novolak epoxy resin-treated inorg. filler- and sp. flame retardant-contg. resin compns. with dripping and blooming prevention)

IT Glass, uses

RL: TEM (Technical or engineered material use); USES (Uses)

(flakes, novolak epoxy resin-treated; novolak epoxy resin-treated inorg. filler- and sp. flame retardant-contg. resin compns. with dripping and blooming prevention)

IT Borates

Hydroxides (inorganic)

Oxides (inorganic), uses

Polycarbonates, uses

Sulfides, uses

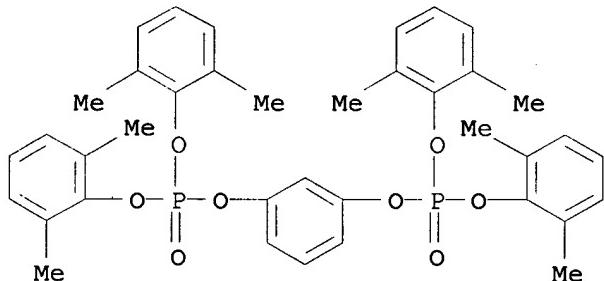
RL: MOA (Modifier or additive use); USES (Uses)

(flame retardant aids; novolak epoxy resin-treated inorg. filler-

- and sp. flame retardant-contg. resin compns. with dripping and blooming prevention)
- IT Phosphates, uses
 Polyoxyphenylenes
 Polythiophenylenes
 RL: MOA (Modifier or additive use); USES (Uses)
 (flame retardants; novolak epoxy resin-treated inorg. filler- and sp. flame retardant-contg. resin compns. with dripping and blooming prevention)
- IT Amines, uses
 RL: MOA (Modifier or additive use); USES (Uses)
 (hindered, antioxidants; novolak epoxy resin-treated inorg. filler- and sp. flame retardant-contg. resin compns. with dripping and blooming prevention)
- IT Phosphates, uses
 RL: MOA (Modifier or additive use); USES (Uses)
 (hydrogen, flame retardant aids; novolak epoxy resin-treated inorg. filler- and sp. flame retardant-contg. resin compns. with dripping and blooming prevention)
- IT Heterocyclic compounds
 RL: MOA (Modifier or additive use); USES (Uses)
 (nitrogen, flame retardants; novolak epoxy resin-treated inorg. filler- and sp. flame retardant-contg. resin compns. with dripping and blooming prevention)
- IT Antioxidants
 Fillers
 Fire-resistant materials
 Fireproofing agents
 Stabilizing agents
 (novolak epoxy resin-treated inorg. filler- and sp. flame retardant-contg. resin compns. with dripping and blooming prevention)
- IT Acrylic polymers, uses
 Polyamides, uses
 Polyolefins
 RL: POF (Polymer in formulation); TEM (Technical or engineered material use); USES (Uses)
 (novolak epoxy resin-treated inorg. filler- and sp. flame retardant-contg. resin compns. with dripping and blooming prevention)
- IT Epoxy resins, uses
 RL: MOA (Modifier or additive use); USES (Uses)
 (phenolic, novolak, glass fibers treated with; novolak epoxy resin-treated inorg. filler- and sp. flame retardant-contg. resin compns. with dripping and blooming prevention)
- IT Vinyl compounds, uses
 RL: POF (Polymer in formulation); TEM (Technical or engineered material use); USES (Uses)
 (polymers; novolak epoxy resin-treated inorg. filler- and sp. flame retardant-contg. resin compns. with dripping and blooming prevention)
- IT 25038-59-9, PET polymer, uses
 RL: POF (Polymer in formulation); TEM (Technical or engineered material use); USES (Uses)
 (Bellpet EFG; novolak epoxy resin-treated inorg. filler- and sp. flame retardant-contg. resin compns. with dripping and blooming

- prevention)
- IT 24968-12-5, Duranex
 RL: POF (Polymer in formulation); TEM (Technical or engineered material use); USES (Uses)
 (Duranex; novolak epoxy resin-treated inorg. filler- and sp. flame retardant-contg. resin compns. with dripping and blooming prevention)
- IT 26590-50-1
 RL: MOA (Modifier or additive use); USES (Uses)
 (U 100, flame retardant aids; novolak epoxy resin-treated inorg. filler- and sp. flame retardant-contg. resin compns. with dripping and blooming prevention)
- IT 6683-19-8, Irganox 1010
 RL: MOA (Modifier or additive use); USES (Uses)
 (antioxidant; novolak epoxy resin-treated inorg. filler- and sp. flame retardant-contg. resin compns. with dripping and blooming prevention)
- IT 26062-94-2, Butylene glycol-terephthalic acid copolymer
 RL: POF (Polymer in formulation); TEM (Technical or engineered material use); USES (Uses)
 (assumed monomers; novolak epoxy resin-treated inorg. filler- and sp. flame retardant-contg. resin compns. with dripping and blooming prevention)
- IT 9002-84-0, PTFE
 RL: MOA (Modifier or additive use); USES (Uses)
 (dripping preventer; novolak epoxy resin-treated inorg. filler- and sp. flame retardant-contg. resin compns. with dripping and blooming prevention)
- IT 1309-42-8, Kisuma 5E 7757-93-9, Calcium hydrogen phosphate
 12767-90-7, Firebreak ZB 24936-68-3, Panlite L 1225, uses
 25068-38-6, Epikote 828 172827-17-7, Sumilite PR 53647
 197527-64-3, Finemag SN
 RL: MOA (Modifier or additive use); USES (Uses)
 (flame retardant aids; novolak epoxy resin-treated inorg. filler- and sp. flame retardant-contg. resin compns. with dripping and blooming prevention)
- IT 24938-67-8, YPX 100F 25212-74-2, Poly(1,4-phenylene sulfide)
 31870-48-1, CR 741 34670-63-8 37640-57-6, MC 610 66813-75-0,
 Sumisafe PM 70785-76-1 84962-53-8, Apinon 901 113089-04-6
 124784-27-6, PX 201 139189-30-3, PX 200 (phosphate)
 147263-99-8, PX 202 (phosphate) 195143-41-0 218768-84-4, Melapur
 200 380366-74-5, PMP 200
 RL: MOA (Modifier or additive use); USES (Uses)
 (flame retardant; novolak epoxy resin-treated inorg. filler- and sp. flame retardant-contg. resin compns. with dripping and blooming prevention)
- IT 25134-01-4, 2,6-Dimethyl-1,4-phenylene ether homopolymer
 RL: MOA (Modifier or additive use); USES (Uses)
 (novolak epoxy resin-treated inorg. filler- and sp. flame retardant-contg. resin compns. with dripping and blooming prevention)
- IT 9003-53-6, Toyo styrol GP-G 200C 9003-54-7, Cevian NJD
 RL: POF (Polymer in formulation); TEM (Technical or engineered material use); USES (Uses)
 (novolak epoxy resin-treated inorg. filler- and sp. flame retardant-contg. resin compns. with dripping and blooming prevention)

- prevention)
- IT 7723-14-0, Novaexcel 140, uses
 RL: MOA (Modifier or additive use); USES (Uses)
 (red, flame retardant aids; novolak epoxy resin-treated inorg.
 filler- and sp. flame retardant-contg. resin compns. with
 dripping and blooming prevention)
- IT 556-52-5D, Glycidyl alcohol, versatic acid esters 11097-59-9, DHT
 4A 80693-00-1, ADK Stab PEP 36 142627-97-2, 1,4-Bis(3-ethyl-3-
 oxetanyl)methoxymethylbenzene 153550-59-5, Sandostab P-EPQ
 RL: MOA (Modifier or additive use); USES (Uses)
 (stabilizer; novolak epoxy resin-treated inorg. filler- and sp.
 flame retardant-contg. resin compns. with dripping and blooming
 prevention)
- IT 139189-30-3, PX 200 (phosphate)
 RL: MOA (Modifier or additive use); USES (Uses)
 (flame retardant; novolak epoxy resin-treated inorg. filler- and
 sp. flame retardant-contg. resin compns. with dripping and
 blooming prevention)
- RN 139189-30-3 HCAPLUS
- CN Phosphoric acid, 1,3-phenylene tetrakis(2,6-dimethylphenyl) ester
 (9CI) (CA INDEX NAME)



RE.CNT 6 THERE ARE 6 CITED REFERENCES AVAILABLE FOR THIS RECORD
 ALL CITATIONS AVAILABLE IN THE RE FORMAT

- L50 ANSWER 13 OF 35 HCAPLUS COPYRIGHT 2005 ACS on STN
 AN 2002:767997 HCAPLUS
 DN 137:280008
 TI Fire-resistant resin composition for making breakers and
 electromagnetic switches
 IN Ishii, Hiromitsu; Kumaki, Jiro; Nagao, Takashi
 PA Toray Industries, Inc., Japan
 SO Jpn. Kokai Tokkyo Koho, 19 pp.
 CODEN: JKXXAF

DT Patent
 LA Japanese

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
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PI JP 2002294051	A2	20021009	JP 2001-94547	200103 29	

PRAI JP 2001-94547 20010329
 OS MARPAT 137:280008
 AB A halogen-free fire-resistant compn. comprises (A) a polyalkylene terephthalate resin, (B) 1-20 wt.% of a vinyl resin, (C) 1-30 wt.% of a phosphoric acid ester, and (D) 20-50 wt.% of a cyanuric acid or isocyanuric acid salt of a triazine compd. Thus a compn. of this invention contained 40 wt.% polybutylene terephthalate, 10 wt.% of acrylonitrile-styrene copolymer, 20 wt.% of 1,3-phenylene tetrakis(2,6-dimethylphenyl) phosphate, and 30 wt.% of melamine isocyanurate. Breakers and electromagnetic switches made from the compn. are also claimed.

IC ICM C08L067-02
 ICS C08J005-04; C08K005-3492; C08K005-521; C08K007-02; C08L025-12; C08L051-00; C08L063-00; C08L101-00; C09K021-10; C09K021-12; H01H045-02; H01H073-06

CC 37-6 (Plastics Manufacture and Processing)
 Section cross-reference(s): 38, 76

ST fire resistant polyester compn breaker electromagnetic switch; polybutylene terephthalate fire resistant compn; acrylonitrile styrene copolymer fire resistant compn; phenylene tetrakis dimethylphenyl phosphate fire resistant compn; melamine isocyanurate fire resistant compn

IT Styrene-butadiene rubber, uses
 RL: POF (Polymer in formulation); TEM (Technical or engineered material use); USES (Uses)
 (block, triblock, epoxidized; fire-resistant resin compn. for making breakers and electromagnetic switches)

IT Electric apparatus
 (breakers; fire-resistant resin compn. for making breakers and electromagnetic switches)

IT Electric switches
 (electromagnetic; fire-resistant resin compn. for making breakers and electromagnetic switches)

IT Fire-resistant materials
 Fireproofing agents
 (fire-resistant resin compn. for making breakers and electromagnetic switches)

IT Glass fibers, uses
 RL: MOA (Modifier or additive use); USES (Uses)
 (fire-resistant resin compn. for making breakers and electromagnetic switches)

IT Fluoropolymers, uses
 Polycarbonates, uses
 Polyesters, uses
 Polyphosphazenes
 Silsesquioxanes
 RL: POF (Polymer in formulation); TEM (Technical or engineered material use); USES (Uses)
 (fire-resistant resin compn. for making breakers and electromagnetic switches)

IT Polymer blends
 RL: TEM (Technical or engineered material use); USES (Uses)
 (fire-resistant resin compn. for making breakers and electromagnetic switches)

IT Phenolic resins, uses
 RL: POF (Polymer in formulation); TEM (Technical or engineered

material use); USES (Uses)
 (novolak; fire-resistant resin compn. for making
 breakers and electromagnetic switches)

IT 471-34-1, KSS 1000, uses 14807-96-6, LMS 300, uses 26761-45-5,
 Cardura E 10 31870-48-1, CR 741 37640-57-6, MCA
139189-30-3, PX 200
 RL: MOA (Modifier or additive use); USES (Uses)
 (fire-resistant resin compn. for making breakers and
 electromagnetic switches)

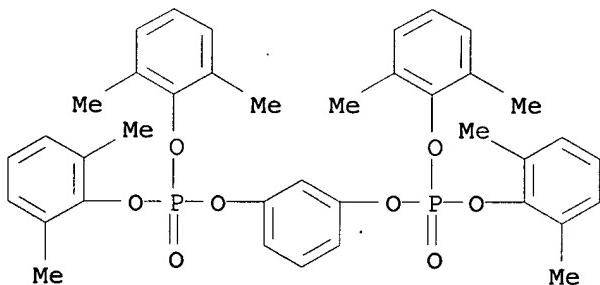
IT 9002-84-0, Teflon 6J **9003-54-7**, Acrylonitrile-styrene
 copolymer **9010-86-0**, A 709 24936-68-3, Iupilon S 3000,
 uses **24968-12-5**, PBT 1100S 25037-45-0 **26062-94-2**
26702-05-6 29762-66-1, Acrylonitrile-glycidyl
 methacrylate-styrene copolymer 99752-88-2, Sumilite PR 53195
 RL: POF (Polymer in formulation); TEM (Technical or engineered
 material use); USES (Uses)
 (fire-resistant resin compn. for making breakers and
 electromagnetic switches)

IT 106107-54-4 694491-73-1
 RL: POF (Polymer in formulation); TEM (Technical or engineered
 material use); USES (Uses)
 (styrene-butadiene rubber, block, triblock, epoxidized;
 fire-resistant resin compn. for making breakers and
 electromagnetic switches)

IT **139189-30-3, PX 200**
 RL: MOA (Modifier or additive use); USES (Uses)
 (fire-resistant resin compn. for making breakers and
 electromagnetic switches)

RN **139189-30-3 HCPLUS**

CN Phosphoric acid, 1,3-phenylene tetrakis(2,6-dimethylphenyl) ester
 (9CI) (CA INDEX NAME)



IT **9003-54-7**, Acrylonitrile-styrene copolymer **9010-86-0**
 , A 709 **24968-12-5**, PBT 1100S **26062-94-2**
29762-66-1, Acrylonitrile-glycidyl methacrylate-styrene
 copolymer
 RL: POF (Polymer in formulation); TEM (Technical or engineered
 material use); USES (Uses)
 (fire-resistant resin compn. for making breakers and
 electromagnetic switches)

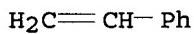
RN **9003-54-7 HCPLUS**

CN 2-Propenenitrile, polymer with ethenylbenzene (9CI) (CA INDEX NAME)

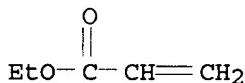
CM 1

CRN 107-13-1
CMF C3 H3 N

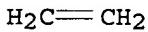
CM 2

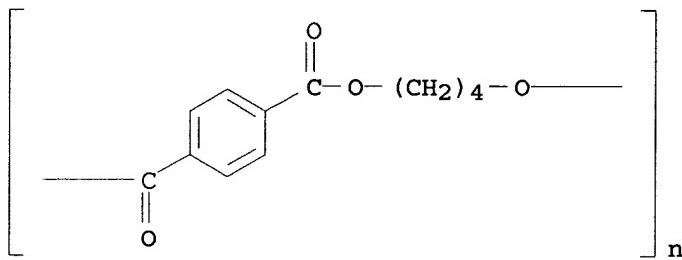
CRN 100-42-5
CMF C8 H8RN 9010-86-0 HCPLUS
CN 2-Propenoic acid, ethyl ester, polymer with ethene (9CI) (CA INDEX NAME)

CM 1

CRN 140-88-5
CMF C5 H8 O2

CM 2

CRN 74-85-1
CMF C2 H4RN 24968-12-5 HCPLUS
CN Poly(oxy-1,4-butanediylloxycarbonyl-1,4-phenylene carbonyl) (9CI) (CA INDEX NAME)



RN 26062-94-2 HCPLUS

CN 1,4-Benzenedicarboxylic acid, polymer with 1,4-butanediol (9CI) (CA INDEX NAME)

CM 1

CRN 110-63-4

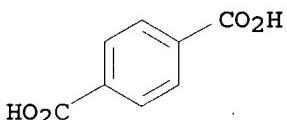
CMF C4 H10 O2

 $\text{HO}-(\text{CH}_2)_4-\text{OH}$

CM 2

CRN 100-21-0

CMF C8 H6 O4



RN 29762-66-1 HCPLUS

CN 2-Propenoic acid, 2-methyl-, oxiranylmethyl ester, polymer with ethenylbenzene and 2-propenenitrile (9CI) (CA INDEX NAME)

CM 1

CRN 107-13-1

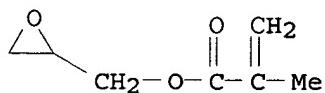
CMF C3 H3 N

 $\text{H}_2\text{C}\equiv\text{CH}-\text{C}\equiv\text{N}$

CM 2

CRN 106-91-2

CMF C7 H10 O3



CM 3

CRN 100-42-5
CMF C8 H8H2C=CH-Ph

L50 ANSWER 14 OF 35 HCAPLUS COPYRIGHT 2005 ACS on STN
 AN 2002:765945 HCAPLUS
 DN 137:279993
 TI Fire-resistant polybutylene terephthalate composition and molded products
 IN Ishii, Hiromitsu; Kumaki, Jiro; Nagao, Takashi
 PA Toray Industries, Inc., Japan
 SO Jpn. Kokai Tokkyo Koho, 19 pp.

CODEN: JKXXAF

DT Patent

LA Japanese

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 2002294050	A2	20021009	JP 2001-94527	200103 29
	WO 2004029154	A1	20040408	WO 2002-JP9852	200209 25

W: CN, KR, US

RW: AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, IE,
IT, LU, MC, NL, PT, SE, SK, TR

EP 1553138 A1 20050713 EP 2002-768047

200209
25R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC,
PT, IE, FI, CY, TR, BG, CZ, EE, SKPRAI JP 2001-94527 A 20010329
WO 2002-JP9852 W 20020925

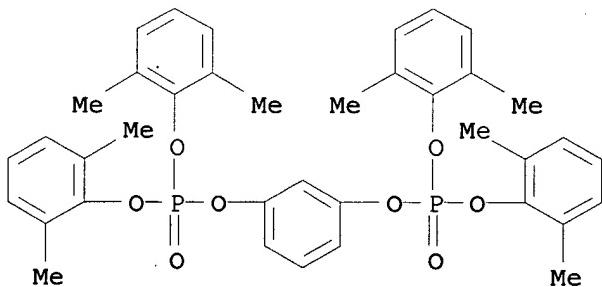
OS MARPAT 137:279993

AB A halogen-free fire-resistant compn.

comprises (A) 100 parts of polybutylene terephthalate or polybutylene terephthalate and polyethylene terephthalate blend, (B) 1-100 parts of a vinyl resin, (C) 1-100 parts of a phosphoric acid ester, (D) 1-150 parts of a cyanuric acid or isocyanuric acid salt

- of a triazine compd., and (E) 0.1-10 parts of an alk. earth metal compd. Thus a compn. of this invention contained 100 parts polybutylene terephthalate, 25 parts of acrylonitrile-styrene copolymer, 40 parts of 1,3-phenylene tetrakis(2,6-dimethylphenyl) phosphate, 40 parts of melamine isocyanurate, and 3 parts of magnesium hydroxide. Mech. parts, elec. parts, and automobile parts made from the compn. are also claimed.
- IC ICM C08L067-02
 ICS C08J005-00; C08K003-10; C08K005-1515; C08K005-3492;
 C08K005-521; C08L101-00
- CC 37-6 (Plastics Manufacture and Processing)
 Section cross-reference(s): 38
- ST polybutylene terephthalate fire resistant compn;
 acrylonitrile styrene copolymer fire resistant compn;
 phenylene tetrakis dimethylphenyl phosphate fire resistant compn; melamine isocyanurate fire resistant compn;
 magnesium hydroxide fire resistant compn
- IT Glass fibers, uses
 RL: MOA (Modifier or additive use); USES (Uses)
 (CS 3J948; fire-resistant polybutylene terephthalate compn. and molded products)
- IT Silsesquioxanes
 RL: POF (Polymer in formulation); TEM (Technical or engineered material use); USES (Uses)
 (DC 4-7105; fire-resistant polybutylene terephthalate compn. and molded products)
- IT Styrene-butadiene rubber, uses
 RL: POF (Polymer in formulation); TEM (Technical or engineered material use); USES (Uses)
 (block, triblock, epoxidized, Epofriend A 1010; fire-resistant polybutylene terephthalate compn. and molded products)
- IT Electric apparatus
 Fire-resistant materials
 Fireproofing agents
 Machinery parts
 (fire-resistant polybutylene terephthalate compn. and molded products)
- IT Alkaline earth compounds
 RL: MOA (Modifier or additive use); USES (Uses)
 (fire-resistant polybutylene terephthalate compn. and molded products)
- IT Epoxy resins, uses
 Fluoropolymers, uses
 Polycarbonates, uses
 Polyesters, uses
 Polyphosphazenes
 RL: POF (Polymer in formulation); TEM (Technical or engineered material use); USES (Uses)
 (fire-resistant polybutylene terephthalate compn. and molded products)
- IT Polymer blends
 RL: TEM (Technical or engineered material use); USES (Uses)
 (fire-resistant polybutylene terephthalate compn. and molded products)
- IT Phenolic resins, uses
 RL: POF (Polymer in formulation); TEM (Technical or engineered

- material use); USES (Uses)
 (novolak; **fire-resistant polybutylene terephthalate**
 compn. and molded products)
- IT Automobiles
 (parts; **fire-resistant polybutylene terephthalate**
 compn. and molded products)
- IT 1309-42-8, Magnesium hydroxide
 RL: MOA (Modifier or additive use); USES (Uses)
 (Kisuma 6E; **fire-resistant polybutylene terephthalate**
 compn. and molded products)
- IT 471-34-1, KSS 1000, uses 14807-96-6, LMS 300, uses 26761-45-5,
 Cardura E 10 31870-48-1, CR 741 37640-57-6, MCA
139189-30-3, PX 200
 RL: MOA (Modifier or additive use); USES (Uses)
 (**fire-resistant polybutylene terephthalate** compn. and
 molded products)
- IT 9002-84-0, Teflon 6J **9003-54-7**, Acrylonitrile-styrene
 copolymer **9010-86-0**, A 709 24936-68-3, Iupilon S 3000,
 uses **24968-12-5**, PBT 1100S 25037-45-0, Bisphenol
 A-carbonic acid copolymer 25068-38-6, Epikote 828
26062-94-2, 1,4-Butanediol-terephthalic acid copolymer
 26702-05-6 **29762-66-1**, Acrylonitrile-glycidyl
 methacrylate-styrene copolymer 99752-88-2, Sumilite PR 53195
 RL: POF (Polymer in formulation); TEM (Technical or engineered
 material use); USES (Uses)
 (**fire-resistant polybutylene terephthalate** compn. and
 molded products)
- IT 106107-54-4 694491-73-1
 RL: POF (Polymer in formulation); TEM (Technical or engineered
 material use); USES (Uses)
 (styrene-butadiene rubber, block, triblock, epoxidized, Epofriend
 A 1010; **fire-resistant polybutylene terephthalate**
 compn. and molded products)
- IT **139189-30-3**, PX 200
 RL: MOA (Modifier or additive use); USES (Uses)
 (**fire-resistant polybutylene terephthalate** compn. and
 molded products)
- RN **139189-30-3** HCPLUS
- CN Phosphoric acid, 1,3-phenylene tetrakis(2,6-dimethylphenyl) ester
 (9CI) (CA INDEX NAME)



IT **9003-54-7**, Acrylonitrile-styrene copolymer **9010-86-0**,
 , A 709 **24968-12-5**, PBT 1100S **26062-94-2**,

SSastri 10/728,334

10/03/2005

1,4-Butanediol-terephthalic acid copolymer 29762-66-1,
Acrylonitrile-glycidyl methacrylate-styrene copolymer
RL: POF (Polymer in formulation); TEM (Technical or engineered
material use); USES (Uses)

(fire-resistant polybutylene terephthalate compn. and
molded products)

RN 9003-54-7 HCAPLUS

CN 2-Propenenitrile, polymer with ethenylbenzene (9CI) (CA INDEX NAME)

CM 1

CRN 107-13-1

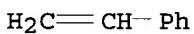
CMF C3 H3 N



CM 2

CRN 100-42-5

CMF C8 H8



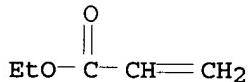
RN 9010-86-0 HCAPLUS

CN 2-Propenoic acid, ethyl ester, polymer with ethene (9CI) (CA INDEX
NAME)

CM 1

CRN 140-88-5

CMF C5 H8 O2



CM 2

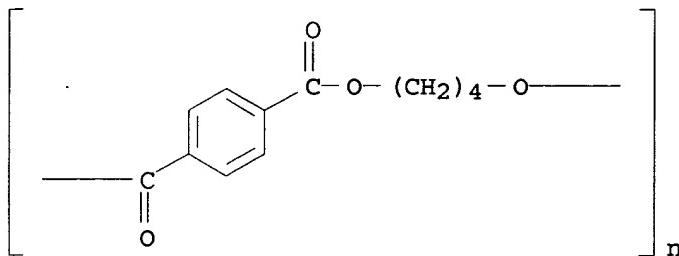
CRN 74-85-1

CMF C2 H4



RN 24968-12-5 HCAPLUS

CN Poly(oxy-1,4-butanediylloxycarbonyl-1,4-phenylene carbonyl) (9CI) (CA
INDEX NAME)



RN 26062-94-2 HCAPLUS

CN 1,4-Benzenedicarboxylic acid, polymer with 1,4-butanediol (9CI) (CA INDEX NAME)

CM 1

CRN 110-63-4

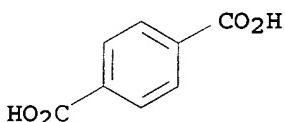
CMF C4 H10 O2

 $\text{HO}-(\text{CH}_2)_4-\text{OH}$

CM 2

CRN 100-21-0

CMF C8 H6 O4



RN 29762-66-1 HCAPLUS

CN 2-Propenoic acid, 2-methyl-, oxiranylmethyl ester, polymer with ethenylbenzene and 2-propenenitrile (9CI) (CA INDEX NAME)

CM 1

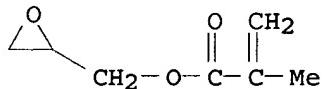
CRN 107-13-1

CMF C3 H3 N

 $\text{H}_2\text{C}\equiv\text{CH}-\text{C}\equiv\text{N}$

CM 2

CRN 106-91-2
 CMF C7 H10 O3



CM 3

CRN 100-42-5
 CMF C8 H8

H₂C=CH-Ph

L50 ANSWER 15 OF 35 HCPLUS COPYRIGHT 2005 ACS on STN
 AN 2002:765944 HCPLUS
 DN 137:279992
 TI Fire-resistant polybutylene terephthalate composition and molded products
 IN Ishii, Hiromitsu; Nagao, Takashi; Kumaki, Jiro
 PA Toray Industries, Inc., Japan
 SO Jpn. Kokai Tokkyo Koho, 17 pp.
 CODEN: JKXXAF
 DT Patent
 LA Japanese
 FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 2002294049	A2	20021009	JP 2001-94518	200103 29
PRAI	JP 2001-94518		20010329		
OS	MARPAT 137:279992				
AB	A halogen-free fire-resistant compn. comprises (A) 100 parts of polybutylene terephthalate or polybutylene terephthalate and polyethylene terephthalate blend, (B) 1-100 parts of an epoxy-modified styrene resin, (C) 1-100 parts of a phosphoric acid ester, and (D) 1-150 parts of a cyanuric acid or isocyanuric acid salt of a triazine compd., where the content of polyphenylene ethers and polyphenylene sulfides is below 5 parts. Thus a compn. of this invention contained 100 parts polybutylene terephthalate, 25 parts of acrylonitrile-glycidyl methacrylate-styrene copolymer, 40 parts of tri-Ph phosphate copolymer with bisphenol A, and 40 parts of melamine isocyanurate. Mech. parts, elec. parts, and automobile parts made from the compn. are also claimed.				
IC	ICM C08L067-02				
	ICS C08J005-00; C08K005-3492; C08K005-521; C08K007-02; C08L063-00				
CC	37-6 (Plastics Manufacture and Processing)				

Section cross-reference(s): 38

ST polybutylene terephthalate fire resistant compn; acrylonitrile glycidyl methacrylate styrene copolymer fire resistant compn; triphenyl phosphate bisphenol A copolymer fire resistant compn; melamine isocyanurate fire resistant compn

IT Styrene-butadiene rubber, uses
 RL: POF (Polymer in formulation); TEM (Technical or engineered material use); USES (Uses)
 (block, triblock, epoxidized; fire-resistant polybutylene terephthalate compn. and molded products)

IT Electric apparatus
 Fire-resistant materials
 Fireproofing agents

Machinery parts
 (fire-resistant polybutylene terephthalate compn. and molded products)

IT Glass fibers, uses
 RL: MOA (Modifier or additive use); USES (Uses)
 (fire-resistant polybutylene terephthalate compn. and molded products)

IT Epoxy resins, uses
 Fluoropolymers, uses
 Polycarbonates, uses
 Polyesters, uses
 Polyphosphazenes
 Silsesquioxanes
 RL: POF (Polymer in formulation); TEM (Technical or engineered material use); USES (Uses)
 (fire-resistant polybutylene terephthalate compn. and molded products)

IT Polymer blends
 RL: TEM (Technical or engineered material use); USES (Uses)
 (fire-resistant polybutylene terephthalate compn. and molded products)

IT Phenolic resins, uses
 RL: POF (Polymer in formulation); TEM (Technical or engineered material use); USES (Uses)
 (novolak; fire-resistant polybutylene terephthalate compn. and molded products)

IT Automobiles
 (parts; fire-resistant polybutylene terephthalate compn. and molded products)

IT 14807-96-6, LMS 300, uses 31870-48-1, CR 741 37640-57-6, MCA 139189-30-3, PX 200
 RL: MOA (Modifier or additive use); USES (Uses)
 (fire-resistant polybutylene terephthalate compn. and molded products)

IT 9002-84-0, Teflon 6J 9010-86-0, A 709 24936-68-3, Iupilon S 3000, uses 24968-12-5, PBT 1100S 25037-45-0, Bisphenol A-carbonic acid copolymer 25068-38-6, Epikote 828 26062-94-2, 1,4-Butanediol-terephthalic acid copolymer 26702-05-6 29762-66-1, Acrylonitrile-glycidyl methacrylate-styrene copolymer 99752-88-2, Sumilite PR 53195
 RL: POF (Polymer in formulation); TEM (Technical or engineered material use); USES (Uses)

(fire-resistant polybutylene terephthalate compn. and
molded products)

IT 106107-54-4 694491-73-1

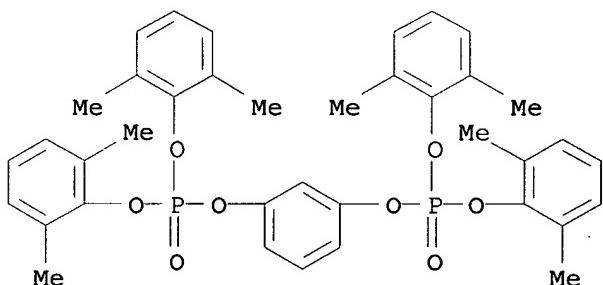
RL: POF (Polymer in formulation); TEM (Technical or engineered
material use); USES (Uses)
(styrene-butadiene rubber, block, triblock, epoxidized;
fire-resistant polybutylene terephthalate compn. and
molded products)

IT 139189-30-3, PX 200

RL: MOA (Modifier or additive use); USES (Uses)
(fire-resistant polybutylene terephthalate compn. and
molded products)

RN 139189-30-3 HCPLUS

CN Phosphoric acid, 1,3-phenylene tetrakis(2,6-dimethylphenyl) ester
(9CI) (CA INDEX NAME)



IT 9010-86-0, A 709 24968-12-5, PBT 1100S

26062-94-2, 1,4-Butanediol-terephthalic acid copolymer

29762-66-1, Acrylonitrile-glycidyl methacrylate-styrene
copolymer

RL: PCF (Polymer in formulation); TEM (Technical or engineered
material use); USES (Uses)

(fire-resistant polybutylene terephthalate compn. and
molded products)

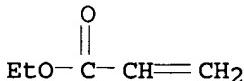
RN 9010-86-0 HCPLUS

CN 2-Propenoic acid, ethyl ester, polymer with ethene (9CI) (CA INDEX
NAME)

CM 1

CRN 140-88-5

CMF C5 H8 O2



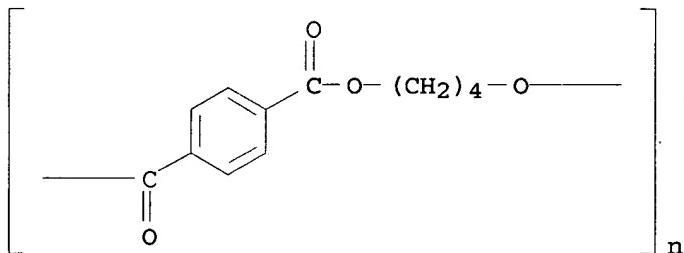
CM 2

CRN 74-85-1

CMF C2 H4



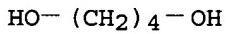
RN 24968-12-5 HCPLUS
 CN Poly(oxy-1,4-butanediylloxycarbonyl-1,4-phenylenecarbonyl) (9CI) (CA INDEX NAME)



RN 26062-94-2 HCPLUS
 CN 1,4-Benzenedicarboxylic acid, polymer with 1,4-butanediol (9CI) (CA INDEX NAME)

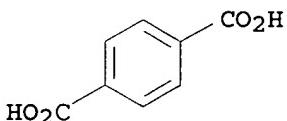
CM 1

CRN 110-63-4
 CMF C4 H10 O2



CM 2

CRN 100-21-0
 CMF C8 H6 O4



RN 29762-66-1 HCPLUS
 CN 2-Propenoic acid, 2-methyl-, oxiranylmethyl ester, polymer with ethenylbenzene and 2-propenenitrile (9CI) (CA INDEX NAME)

CM 1

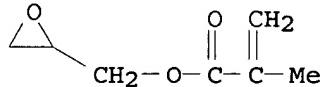
CRN 107-13-1

CMF C3 H3 N



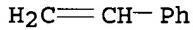
CM 2

CRN 106-91-2
 CMF C7 H10 O3



CM 3

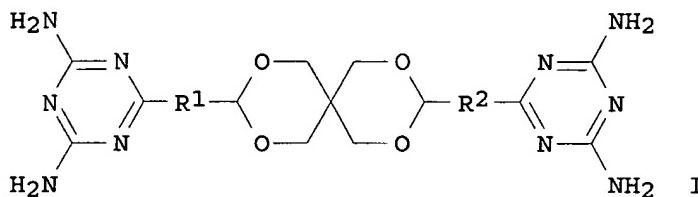
CRN 100-42-5
 CMF C8 H8



L50 ANSWER 16 OF 35 HCAPLUS COPYRIGHT 2005 ACS on STN
 AN 2002:566361 HCAPLUS
 DN 137:125857
 TI Halogen-free fire-resistant resin
 composition containing triazine ring-bearing spiro-compound
 flame retarder
 IN Harashina, Hatsuhiro
 PA Polyplastics Co., Ltd., Japan
 SO Jpn. Kokai Tokkyo Koho, 22 pp.
 CODEN: JKXXAF
 DT Patent
 LA Japanese
 FAN.CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
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PI JP 2002212433	A2	20020731	JP 2001-5139	200101 12
PRAI JP 2001-5139		20010112		
OS MARPAT 137:125857				
GI				



- AB Title compn. comprises (A) 100 wt. parts of base resins , (B) 0.1-500 wt. parts of a **flame retarder** such as a triazine-contg. spiro-compd. (formula I) or salts thereof, wherein R1 and R2 are independently alkylene, arylene, or aralkyl groups. Furthermore, the compn. may contain second **fire retardants**, oxidn. inhibitors, heat stabilizers, a dripping inhibitors, mold releasing agents, and fillers. The second **flame retarder** is selected from phosphorus-contg. compds., nitrogen-contg. compds., sulfur-contg. compds., silicon-contg. compds., alcs., inorg. compds., and arom. resins. Thus, a **fire-resistant** compn. was prepnd. from nylon 66 (base resin)100, CTU guanamine {6,6'-(2,4,8,10-tetraoxaspiro[5.5]undecane-3,9-diylidi-2,1-ethanediyl)bis (1,3,5-triazine-2,4-diamine)} 20, and Irganox 1010 (antioxidant) 0.3 part.
- IC ICM C08L101-00
ICS C08J005-00; C08K003-00; C08K003-32; C08K005-05; C08K005-16;
C08K005-3492; C08K005-36; C08K005-49; C08K005-541
- CC 37-6 (Plastics Manufacture and Processing)
- ST nonhalogen **fire resistant** compn triazine ring spiro **flame retarder**
- IT Polymer blends
RL: POF (Polymer in formulation); PRP (Properties); TEM (Technical or engineered material use); USES (Uses)
(HIPS-poly(2,6-dimethyl-1,4-phenylene)oxide; manuf. of **halogen-free fire-resistant** resin
compn. contg. triazine ring-bearing spiro-compd. **flame retarder**)
- IT Polyamides, properties
RL: POF (Polymer in formulation); PRP (Properties); TEM (Technical or engineered material use); USES (Uses)
(base resins, Amilan CM; manuf. of **halogen-free fire-resistant** resin compn. contg. triazine ring-bearing spiro-compd. **flame retarder**)
- IT Polyamides, properties
Polycarbonates, properties
Polyesters, properties
RL: POF (Polymer in formulation); PRP (Properties); TEM (Technical or engineered material use); USES (Uses)
(base resins; manuf. of **halogen-free fire-resistant** resin compn. contg. triazine ring-bearing spiro-compd. **flame retarder**)
- IT Fluoropolymers, uses
RL: MOA (Modifier or additive use); USES (Uses)
(dripping inhibitor; manuf. of **halogen-free fire-resistant** resin compn. contg. triazine ring-bearing

spiro-compd. **flame retarder**)

IT Glass fibers, uses
 RL: MOA (Modifier or additive use); USES (Uses)
 (filler; manuf. of **halogen-free fire**
 -resistant resin compn. contg. triazine ring-bearing spiro-compd.
flame retarder)

IT Alcohols, uses
 Inorganic compounds
 RL: MOA (Modifier or additive use); USES (Uses)
 (fire retardant; manuf. of **halogen-**
free fire-resistant resin compn. contg.
 triazine ring-bearing spiro-compd. **flame retarder**)

IT Spiro compounds
 RL: MOA (Modifier or additive use); USES (Uses)
 (guanamines, **fire** retardant; manuf. of **halogen**
-free fire-resistant resin compn. contg.
 triazine ring-bearing spiro-compd. **flame retarder**)

IT Antioxidants
 Fillers
 Fire-resistant materials
 Fireproofing agents
 Heat stabilizers
 (manuf. of **halogen-free fire**
 -resistant resin compn. contg. triazine ring-bearing spiro-compd.
flame retarder)

IT Parting materials
 (mold-release agents, **fire** retardant; manuf. of
halogen-free fire-resistant resin
 compn. contg. triazine ring-bearing spiro-compd. **flame**
retarder)

IT Organic compounds, uses
 RL: MOA (Modifier or additive use); USES (Uses)
 (nitrogen-contg., **fire** retardant; manuf. of
halogen-free fire-resistant resin
 compn. contg. triazine ring-bearing spiro-compd. **flame**
retarder)

IT Organic compounds, uses
 RL: MOA (Modifier or additive use); USES (Uses)
 (phosphorus-contg., **fire** retardant; manuf. of
halogen-free fire-resistant resin
 compn. contg. triazine ring-bearing spiro-compd. **flame**
retarder)

IT Organic compounds, uses
 RL: MOA (Modifier or additive use); USES (Uses)
 (silicon-contg., **fire** retardant; manuf. of
halogen-free fire-resistant resin
 compn. contg. triazine ring-bearing spiro-compd. **flame**
retarder)

IT Zeolite 3A
 RL: MOA (Modifier or additive use); USES (Uses)
 (stabilizer; manuf. of **halogen-free**
fire-resistant resin compn. contg. triazine ring-bearing
 spiro-compd. **flame retarder**)

IT Organic compounds, uses
 RL: MOA (Modifier or additive use); USES (Uses)
 (sulfur-contg., **fire** retardant; manuf. of

- halogen-free fire-resistant resin
compn. contg. triazine ring-bearing spiro-compd. flame retarder)
- IT 6683-19-8, Irganox 1010 36443-68-2, Irganox 245
RL: MOA (Modifier or additive use); USES (Uses)
(antioxidant; manuf. of halogen-free fire-resistant resin compn. contg. triazine ring-bearing spiro-compd. flame retarder)
- IT 25038-54-4, Nylon 6, properties
RL: POF (Polymer in formulation); PRP (Properties); TEM (Technical or engineered material use); USES (Uses)
(base resins, Amilan CM; manuf. of halogen-free fire-resistant resin compn. contg. triazine ring-bearing spiro-compd. flame retarder)
- IT 9003-53-6, Polystyrene
RL: POF (Polymer in formulation); PRP (Properties); TEM (Technical or engineered material use); USES (Uses)
(base resins, Toyo Styrol GP-G 200C; manuf. of halogen-free fire-resistant resin compn. contg. triazine ring-bearing spiro-compd. flame retarder)
- IT 9003-54-7, Cevian JD 24936-68-3, Panlite L 1225,
properties 24938-67-8, Poly(2,6-dimethyl-1,4-phenylene)oxide
24968-12-5, Duranex 25037-45-0 25038-59-9,
Bellpet EFG 10, properties 25085-53-4, Noblen X 101A 25134-01-4,
Poly(2,6-dimethyl-1,4-phenylene)oxide 26062-94-2
32131-17-2, Nylon 66, properties 126730-46-9, Duracon M 90-44
RL: POF (Polymer in formulation); PRP (Properties); TEM (Technical or engineered material use); USES (Uses)
(base resins; manuf. of halogen-free fire-resistant resin compn. contg. triazine ring-bearing spiro-compd. flame retarder)
- IT 9002-84-0, Polytetrafluoroethylene
RL: MOA (Modifier or additive use); USES (Uses)
(dripping inhibitor; manuf. of halogen-free fire-resistant resin compn. contg. triazine ring-bearing spiro-compd. flame retarder)
- IT 1314-56-3, Phosphoric anhydride, uses 7723-14-0, Novaexcel F5,
uses 7789-78-8, Calcium hydride 12767-90-7, Fire Brake
ZB 24979-70-2, Maruka Lyncur MS 1P 26834-02-6, Milex XL 225
93981-32-9, CR 741C 139189-30-3, PX 200 172827-17-7,
Sumilite PR 53647 184378-36-7, Terraju C60 243144-78-7, PMP 100
RL: MOA (Modifier or additive use); USES (Uses)
(fire retardant auxiliary; manuf. of halogen-free fire-resistant resin compn. contg. triazine ring-bearing spiro-compd. flame retarder)
- IT 6542-67-2D, Triazines, derivs.
RL: MOA (Modifier or additive use); USES (Uses)
(fire retardant; manuf. of halogen-free fire-resistant resin compn. contg. triazine ring-bearing spiro-compd. flame retarder)
- IT 108-80-5D, Isocyanuric acid, reaction products with isocyanuric acid
22535-90-6, CTU guanamine 22535-90-6D, CTU guanamine, reaction
products with isocyanuric acid
RL: MOA (Modifier or additive use); USES (Uses)
(spiro guanamine compd., flame retarders; manuf. of halogen-free fire-resistant resin

compn. contg. triazine ring-bearing spiro-compd. **flame retarder**)

IT 11097-59-9, DHT 4A
 RL: MOA (Modifier or additive use); USES (Uses)
 (stabilizer, DHT 4A; manuf. of **halogen-free fire-resistant resin** compn. contg. triazine ring-bearing spiro-compd. **flame retarder**)

IT 38613-77-3, Tetrakis(2,4-di-tert-butylphenyl)-4,4'-biphenylenediphosphonite
 RL: MOA (Modifier or additive use); USES (Uses)
 (stabilizer, SandoStab P-EPQ; manuf. of **halogen-free fire-resistant resin** compn. contg. triazine ring-bearing spiro-compd. **flame retarder**)

IT 80693-00-1 153550-59-5, SandoStab P-EPQ
 RL: MOA (Modifier or additive use); USES (Uses)
 (stabilizer; manuf. of **halogen-free fire-resistant resin** compn. contg. triazine ring-bearing spiro-compd. **flame retarder**)

IT 9003-54-7, Cevian JD 24968-12-5, Duranex
 25038-59-9, Bellpet EFG 10, properties 26062-94-2
 RL: POF (Polymer in formulation); PRP (Properties); TEM (Technical or engineered material use); USES (Uses)
 (base resins; manuf. of **halogen-free fire-resistant resin** compn. contg. triazine ring-bearing spiro-compd. **flame retarder**)

RN 9003-54-7 HCAPLUS

CN 2-Propenenitrile, polymer with ethenylbenzene (9CI) (CA INDEX NAME)

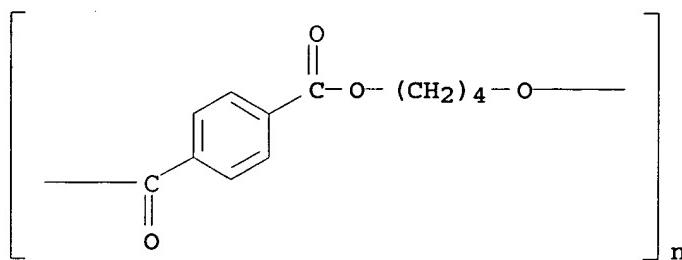
CM 1

CRN 107-13-1
CMF C3 H3 N

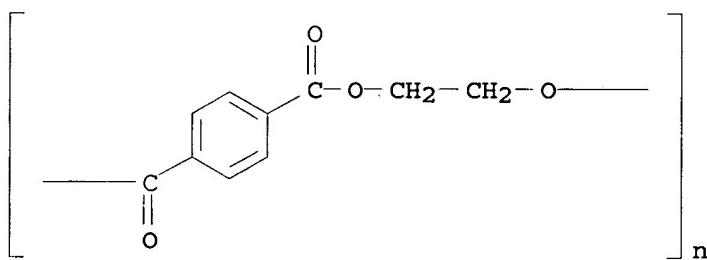
CM 2

CRN 100-42-5
CMF C8 H8

RN 24968-12-5 HCAPLUS
 CN Poly(oxy-1,4-butanediylloxycarbonyl-1,4-phenylene carbonyl) (9CI) (CA INDEX NAME)



RN 25038-59-9 HCAPLUS

CN Poly(oxy-1,2-ethanediylloxycarbonyl-1,4-phenylene carbonyl) (9CI) (CA
INDEX NAME)

RN 26062-94-2 HCAPLUS

CN 1,4-Benzenedicarboxylic acid, polymer with 1,4-butanediol (9CI) (CA
INDEX NAME)

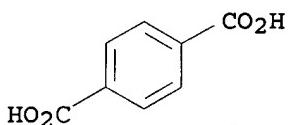
CM 1

CRN 110-63-4

CMF C₄ H₁₀ O₂HO - (CH₂)₄ - OH

CM 2

CRN 100-21-0

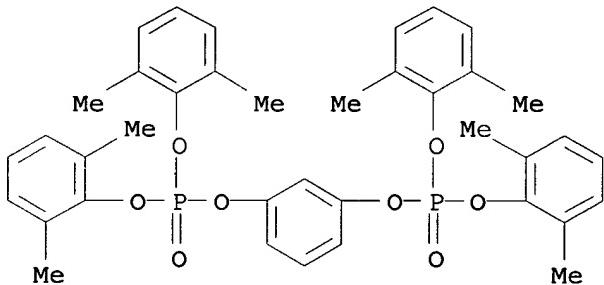
CMF C₈ H₆ O₄

IT 139189-30-3, PX 200

RL: MOA (Modifier or additive use); USES (Uses)
 (fire retardant auxiliary; manuf. of halogen-free fire-resistant resin compn. contg.
 triazine ring-bearing spiro-compd. flame retarder)

RN 139189-30-3 HCPLUS

CN Phosphoric acid, 1,3-phenylene tetrakis(2,6-dimethylphenyl) ester
 (9CI) (CA INDEX NAME)



WO 0194472

L50 ANSWER 17 OF 35 HCPLUS COPYRIGHT 2005 ACS on STN

AN 2002:566360 HCPLUS

DN 137:125856

TI Halogen-free fire-resistant resin
 composition containing formaldehyde polymer fire retardant
 IN Harashina, Hatsuhiko
 PA Polyplastics Co., Ltd., Japan
 SO Jpn. Kokai Tokkyo Koho, 21 pp.
 CODEN: JKXXAF

DT Patent

LA Japanese

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 2002212432	A2	20020731	JP 2001-5138	200101 12

PRAI JP 2001-5138 20010112

AB Title compn. comprises (A) base resins 100 wt parts, (B) fire retardants 0.1-300 wt. parts. The fire retardant comprises (I) formaldehyde polymer such as polymer polyacetal and/or polydioxolane and (II) nitrogen-contg. compd. and/or arom. resin. The nitrogen-contg. compd. is selected from (a) amino group-contg. ring compd., (b) urea compd., and (c) guanidino compd. The arom. resin is a resin having arom. ring with hydroxyl group and/or amino group on a main chain or a side chain. Thus, a fire-resistant compn. was prep'd. from Amilan CM (Nylon 6) 100, BellPet EFG 10 1, Melam 7, PX 200 (fire retardant auxiliary) 10, Irganox 1010 (antioxidant) 0.3, and polytetrafluoroethylene (dripping inhibitor) 0.5 part.

IC ICM C08L101-00

ICS C08J005-00; C08K003-00; C08K003-32; C08K005-13; C08K005-16;
 C08K005-36; C08K005-49; C08K005-541; C08L059-00; C08L061-02;

C08L067-02; C09K021-14

CC 37-6 (Plastics Manufacture and Processing)
ST halogen fire resistant resin compn formaldehyde polymer
retardant

IT Polyamides, properties
RL: POF (Polymer in formulation); PRP (Properties); TEM (Technical or engineered material use); USES (Uses)
(Amilan CM, base resins; manuf. of **halogen-free**
fire-resistant resin compn. contg. formaldehyde polymer
fire retardant)

IT Acrylic polymers, properties
Polyamides, properties
Polycarbonates, properties
Polyesters, properties
Polyethers, properties
Polyolefins
Polyoxyphenylenes
RL: POF (Polymer in formulation); PRP (Properties); TEM (Technical or engineered material use); USES (Uses)
(base resin; manuf. of **halogen-free**
fire-resistant resin compn. contg. formaldehyde polymer
fire retardant)

IT Polymer blends
RL: POF (Polymer in formulation); PRP (Properties); TEM (Technical or engineered material use); USES (Uses)
(base resins, HIPS-poly(2,6-dimethyl-1,4-phenylene)oxide; manuf.
of halogen-free fire-resistant
resin compn. contg. formaldehyde polymer **fire**
retardant)

IT Polyesters, properties
RL: POF (Polymer in formulation); PRP (Properties); TEM (Technical or engineered material use); USES (Uses)
(base resins; manuf. of **halogen-free**
fire-resistant resin compn. contg. formaldehyde polymer
fire retardant)

IT Fluoropolymers, uses
RL: MOA (Modifier or additive use); USES (Uses)
(dripping inhibitor; manuf. of **halogen-free**
fire-resistant resin compn. contg. formaldehyde polymer
fire retardant)

IT Glass fibers, uses
RL: MOA (Modifier or additive use); USES (Uses)
(filler; manuf. of **halogen-free fire**
-resistant resin compn. contg. formaldehyde polymer **fire**
retardant)

IT Antioxidants
Fillers
 Fire-resistant materials
 Fireproofing agents
Stabilizing agents
 (manuf. of **halogen-free fire**
 -resistant resin compn. contg. formaldehyde polymer **fire**
 retardant)

IT Metals, uses
RL: MOA (Modifier or additive use); USES (Uses)
(manuf. of **halogen-free fire**)

- resistant resin compn. contg. formaldehyde polymer **fire retardant**)
- IT Polyoxymethylenes, uses
 - RL: TEM (Technical or engineered material use); USES (Uses) (manuf. of **halogen-free fire** -resistant resin compn. contg. formaldehyde polymer **fire retardant**)
- IT Organic compounds, uses
 - RL: MOA (Modifier or additive use); USES (Uses) (phosphorus-contg.; manuf. of **halogen-free fire**-resistant resin compn. contg. formaldehyde polymer **fire retardant**)
- IT Vinyl compounds, properties
 - RL: POF (Polymer in formulation); PRP (Properties); TEM (Technical or engineered material use); USES (Uses) (polymers, base resin; manuf. of **halogen-free fire**-resistant resin compn. contg. formaldehyde polymer **fire retardant**)
- IT Organic compounds, uses
 - RL: MOA (Modifier or additive use); USES (Uses) (silicon-contg.; manuf. of **halogen-free fire**-resistant resin compn. contg. formaldehyde polymer **fire retardant**)
- IT Acrylic polymers, properties
 - RL: POF (Polymer in formulation); PRP (Properties); TEM (Technical or engineered material use); USES (Uses) (styrene-contg., base resin; manuf. of **halogen-free fire**-resistant resin compn. contg. formaldehyde polymer **fire retardant**)
- IT Organic compounds, uses
 - RL: MOA (Modifier or additive use); USES (Uses) (sulfur-contg.; manuf. of **halogen-free fire**-resistant resin compn. contg. formaldehyde polymer **fire retardant**)
- IT 25038-54-4, Nylon 6, properties
 - RL: POF (Polymer in formulation); PRP (Properties); TEM (Technical or engineered material use); USES (Uses) (Amilan CM, base resins; manuf. of **halogen-free fire**-resistant resin compn. contg. formaldehyde polymer **fire retardant**)
- IT 25067-64-5, CX-PD
 - RL: MOA (Modifier or additive use); USES (Uses) (CX-PD, **fire retardant**-contg.; manuf. of **halogen-free fire**-resistant resin compn. contg. formaldehyde polymer **fire retardant**)
- IT 9003-53-6, Polystyrene
 - RL: POF (Polymer in formulation); PRP (Properties); TEM (Technical or engineered material use); USES (Uses) (Toyo Styrol GP-G 200C, base resins; manuf. of **halogen-free fire**-resistant resin compn. contg. formaldehyde polymer **fire retardant**)
- IT 9003-54-7, Cevian JD 9003-56-9, Cevian DP 611
24936-68-3, Panlite L 1225, properties 24938-67-8,
Poly(2,6-dimethyl-1,4-phenylene)oxide 24968-12-5, Duranex
25037-45-0 25038-59-9, BellPet EFG 10, properties
25134-01-4, Poly(2,6-dimethyl-1,4-phenylene)oxide 26062-94-2

RL: POF (Polymer in formulation); PRP (Properties); TEM (Technical or engineered material use); USES (Uses)
 (base resins; manuf. of **halogen-free**
fire-resistant resin compn. contg. formaldehyde polymer
fire retardant)

IT 9002-84-0, Polytetrafluoroethylene
 RL: MOA (Modifier or additive use); USES (Uses)
 (dripping inhibitor; manuf. of **halogen-free**
fire-resistant resin compn. contg. formaldehyde polymer
fire retardant)

IT 1314-56-3, Phosphoric anhydride, uses 7723-14-0, Novared 140, uses
 7789-78-8, Calcium hydride 12767-90-7, Fire Brake ZB
 93981-32-9, CR 741C 139189-30-3, PX 200 184378-36-7,
 TerraJu C 60
 RL: MOA (Modifier or additive use); USES (Uses)
 (**fire retardant auxiliary;** manuf. of **halogen-**
free fire-resistant resin compn. contg.
 formaldehyde polymer **fire retardant)**

IT 3576-88-3, Melam 26834-02-6, Milex XL 225 28726-47-8,
 Poly(oxymethyleneoxy-1,2-ethanediyl) 37640-57-6, MC 610
 117313-45-8, Epikote 1004K 126730-46-9, Duracon M 90-44
 172827-17-7, PR 53647
 RL: MOA (Modifier or additive use); USES (Uses)
 (**fire retardant-contg.**; manuf. of **halogen-**
free fire-resistant resin compn. contg.
 formaldehyde polymer **fire retardant)**

IT 50-00-0D, Formaldehyde, polymers 6683-19-8, Irganox 1010
 RL: MOA (Modifier or additive use); USES (Uses)
 (**manuf.** of **halogen-free fire**
-resistant resin compn. contg. formaldehyde polymer **fire**
retardant)

IT 38613-77-3, Tetrakis(2,4-di-tert-butylphenyl)-4,4'-
 biphenylenediphosphonite 80693-00-1 153550-59-5, Sandostab P-EPQ
 RL: MOA (Modifier or additive use); USES (Uses)
 (**stabilizer;** manuf. of **halogen-free**
fire-resistant resin compn. contg. formaldehyde polymer
fire retardant)

IT 9003-54-7, Cevian JD 9003-56-9, Cevian DP 611
 24968-12-5, Duranex 25038-59-9, BellPet EFG 10,
 properties 26062-94-2
 RL: POF (Polymer in formulation); PRP (Properties); TEM (Technical or engineered material use); USES (Uses)
 (base resins; manuf. of **halogen-free**
fire-resistant resin compn. contg. formaldehyde polymer
fire retardant)

RN 9003-54-7 HCPLUS
 CN 2-Propenenitrile, polymer with ethenylbenzene (9CI) (CA INDEX NAME)

CM 1

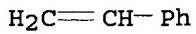
CRN 107-13-1

CMF C3 H3 N



CM 2

CRN 100-42-5
CMF C8 H8



RN 9003-56-9 HCPLUS
CN 2-Propenenitrile, polymer with 1,3-butadiene and ethenylbenzene
(9CI) (CA INDEX NAME)

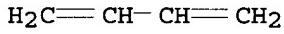
CM 1

CRN 107-13-1
CMF C3 H3 N



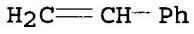
CM 2

CRN 106-99-0
CMF C4 H6

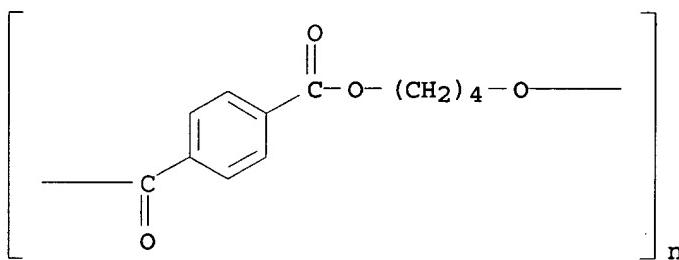


CM 3

CRN 100-42-5
CMF C8 H8

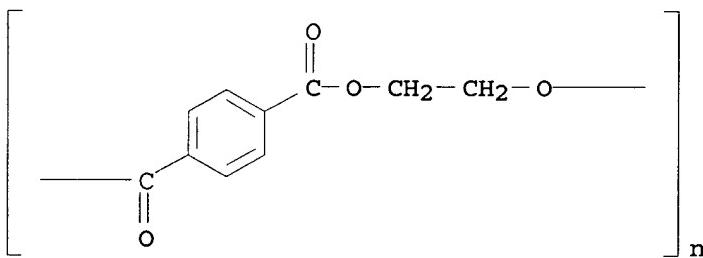


RN 24968-12-5 HCPLUS
CN Poly(oxy-1,4-butanediylloxycarbonyl-1,4-phenylenecarbonyl) (9CI) (CA
INDEX NAME)



RN 25038-59-9 HCAPLUS

CN Poly(oxy-1,2-ethanediylloxycarbonyl-1,4-phenlenecarbonyl) (9CI) (CA INDEX NAME)



RN 26062-94-2 HCAPLUS

CN 1,4-Benzenedicarboxylic acid, polymer with 1,4-butanediol (9CI) (CA INDEX NAME)

CM 1

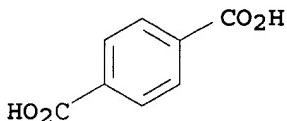
CRN 110-63-4

CMF C4 H10 O2

$$\text{HO} - (\text{CH}_2)_4 - \text{OH}$$

CM 2

CRN 100-21-0
CMF C8 H6 O4

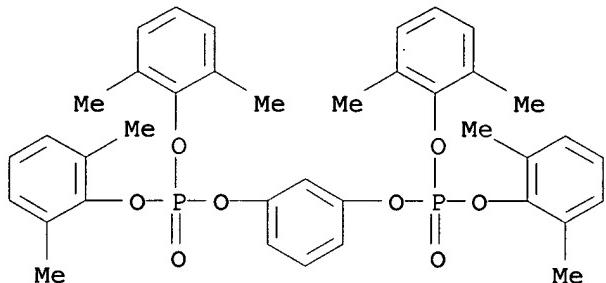


IT 139189-30-3, PX 200

RL: MOA (Modifier or additive use); USES (Uses)
 (fire retardant auxiliary; manuf. of halogen-free fire-resistant resin compn. contg. formaldehyde polymer fire retardant)

RN 139189-30-3 HCAPLUS

CN Phosphoric acid, 1,3-phenylene tetrakis(2,6-dimethylphenyl) ester
 (9CI) (CA INDEX NAME)



L50 ANSWER 18 OF 35 HCAPLUS COPYRIGHT 2005 ACS on STN

AN 2002:268661 HCAPLUS

DN 136:295556

TI Halogen-free flame-retardant thermoplastic resin compositions

IN Harashina, Hatsuhiko

PA Polyplastics Co., Ltd., Japan

SO Jpn. Kokai Tokkyo Koho, 30 pp.

CODEN: JKXXAF

DT Patent

LA Japanese

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
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PI	JP 2002105336	A2	20020410	JP 2001-226761	200107 26

PRAI JP 2000-225243 A 20000726

AB The compns. useful for molding contain (A) thermoplastic resins and (B) fireproofing agents which comprise polyphenylene oxide resins, phosphate esters and cyclic urea compds. Thus, a compn. contg. Duranex (PBT) 70, poly(2,6-dimethyl-1,4-phenylene oxide) 30, PX 200 (a phosphate-type fireproofing agent) 18, acetylene urea 15 parts and other additives gave injection molded test pieces with UL94 flammability rating V 0 and no blooming.

IC ICM C08L101-00

ICS C08J005-00; C08K005-34; C08K005-521; C08L071-12; C09K021-02; C09K021-04; C09K021-14

CC 37-3 (Plastics Manufacture and Processing)

ST blooming redn halogen free flame retardant thermoplastic resin molding; acetylene urea fireproofing agent thermoplastic resin molding compn; polyester polyoxyphenylene flame retardant thermoplastic

resin molding compn; cyclic urea acetylene compd
fireproofing agent thermoplastic resin molding
IT Polyoxyphenylenes
RL: MOA (Modifier or additive use); POF (Polymer in formulation);
PRP (Properties); TEM (Technical or engineered material use); USES
(Uses)
(fireproofing agent; halogen-free
flame-retardant thermoplastic resin compns.)

IT **Fireproofing agents**
(halogen-free flame-retardant
thermoplastic resin compns.)

IT Epoxy resins, properties
Polycarbonates, properties
Polyesters, properties
RL: POF (Polymer in formulation); PRP (Properties); TEM (Technical
or engineered material use); USES (Uses)
(halogen-free flame-retardant
thermoplastic resin compns.)

IT 9003-53-6, GP-G 200C
RL: POF (Polymer in formulation); PRP (Properties); TEM (Technical
or engineered material use); USES (Uses)
(Toyo Styrol GP 14L; halogen-free
flame-retardant thermoplastic resin compns.)

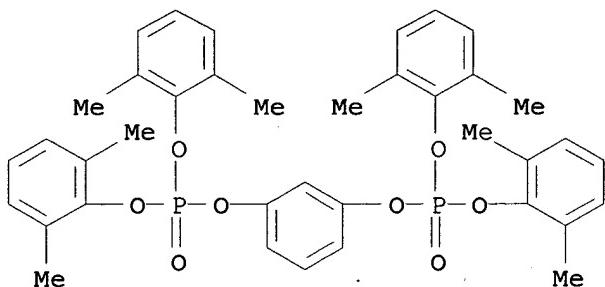
IT 69-93-2, Uric acid, uses 496-46-8, Acetylene urea 5945-33-5,
Fyrolflex BDP 18276-12-5 57583-54-7, Reofos RDP 83919-56-6
97964-60-8 124784-27-6, PX 201 **139189-30-3**, PX 200
147263-99-8, PX 202
RL: MOA (Modifier or additive use); USES (Uses)
(fireproofing agent; halogen-free
flame-retardant thermoplastic resin compns.)

IT 24938-67-8, YPX-100F 25134-01-4, Poly(2,6-dimethyl-1,4-phenylene
oxide)
RL: MOA (Modifier or additive use); POF (Polymer in formulation);
PRP (Properties); TEM (Technical or engineered material use); USES
(Uses)
(fireproofing agent; halogen-free
flame-retardant thermoplastic resin compns.)

IT 9003-54-7, Cevian JD 9003-56-9, Cevian DP 611
24936-68-3, Panlite L 1225, properties 24968-12-5,
Poly(butylene terephthalate) 25037-45-0, Bisphenol A-carbonic acid
copolymer 25038-59-9, Bellpet EFG 10, properties
25068-38-6, Pheno Tohto YP 50 26062-94-2, Butylene
glycol-terephthalic acid copolymer 26590-50-1, U-Polymer
U-100 30580-17-7, Butylene glycol-isophthalic
acid-terephthalic acid copolymer 117313-45-8, Epikote 1004K
RL: POF (Polymer in formulation); PRP (Properties); TEM (Technical
or engineered material use); USES (Uses)
(halogen-free flame-retardant
thermoplastic resin compns.)

IT **139189-30-3**, PX 200
RL: MOA (Modifier or additive use); USES (Uses)
(fireproofing agent; halogen-free
flame-retardant thermoplastic resin compns.)

RN 139189-30-3 HCPLUS
CN Phosphoric acid, 1,3-phenylene tetrakis(2,6-dimethylphenyl) ester
(9CI) (CA INDEX NAME)



IT 9003-54-7, Cevian JD 9003-56-9, Cevian DP 611
24968-12-5, Poly(butylene terephthalate) 25038-59-9
, Bellpet EFG 10, properties 26062-94-2, Butylene
glycol-terephthalic acid copolymer 26590-50-1, U-Polymer
U-100 30580-17-7, Butylene glycol-isophthalic
acid-terephthalic acid copolymer
RL: POF (Polymer in formulation); PRP (Properties); TEM (Technical
or engineered material use); USES (Uses)
(halogen-free flame-retardant
thermoplastic resin compns.)

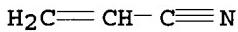
RN 9003-54-7 HCPLUS

CN 2-Propenenitrile, polymer with ethenylbenzene (9CI) (CA INDEX NAME)

CM 1

CRN 107-13-1

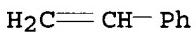
CMF C3 H3 N



CM 2

CRN 100-42-5

CMF C8 H8



RN 9003-56-9 HCPLUS

CN 2-Propenenitrile, polymer with 1,3-butadiene and ethenylbenzene
(9CI) (CA INDEX NAME)

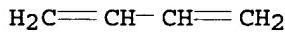
CM 1

CRN 107-13-1

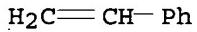
CMF C3 H3 N



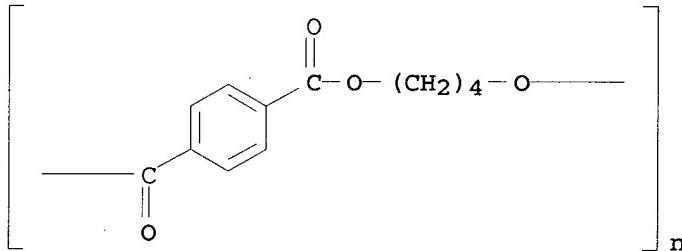
CM 2

CRN 106-99-0
CMF C4 H6

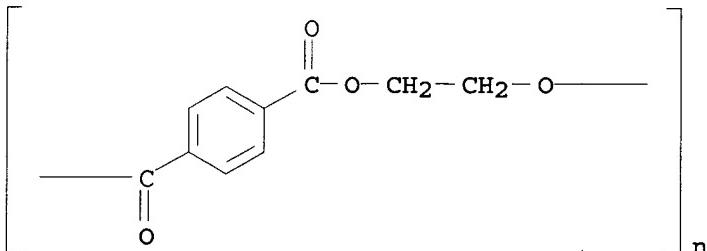
CM 3

CRN 100-42-5
CMF C8 H8

RN 24968-12-5 HCPLUS
 CN Poly(oxy-1,4-butanediylloxycarbonyl-1,4-phenylenecarbonyl) (9CI) (CA
 INDEX NAME)



RN 25038-59-9 HCPLUS
 CN Poly(oxy-1,2-ethanediylloxycarbonyl-1,4-phenylenecarbonyl) (9CI) (CA
 INDEX NAME)

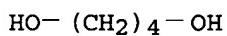


RN 26062-94-2 HCPLUS

CN 1,4-Benzenedicarboxylic acid, polymer with 1,4-butanediol (9CI) (CA INDEX NAME)

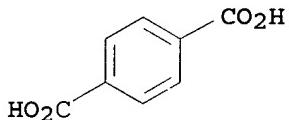
CM 1

CRN 110-63-4
CMF C4 H10 O2



CM 2

CRN 100-21-0
CMF C8 H6 O4

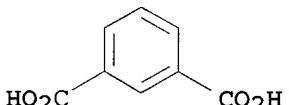


RN 26590-50-1 HCPLUS

CN 1,3-Benzenedicarboxylic acid, polymer with 1,4-benzenedicarboxylic acid and 4,4'-(1-methylethylidene)bis[phenol] (9CI) (CA INDEX NAME)

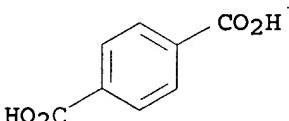
CM 1

CRN 121-91-5
CMF C8 H6 O4



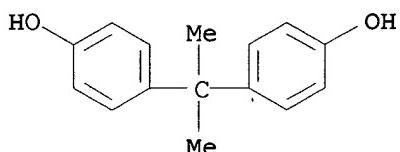
CM 2

CRN 100-21-0
CMF C8 H6 O4



CM 3

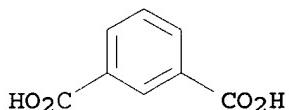
CRN 80-05-7
 CMF C15 H16 O2



RN 30580-17-7 HCAPLUS
 CN 1,3-Benzeneddicarboxylic acid, polymer with 1,4-benzeneddicarboxylic acid and 1,4-butanediol (9CI) (CA INDEX NAME)

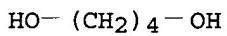
CM 1

CRN 121-91-5
 CMF C8 H6 O4



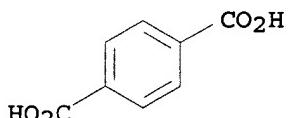
CM 2

CRN 110-63-4
 CMF C4 H10 O2



CM 3

CRN 100-21-0
 CMF C8 H6 O4



L50 ANSWER 19 OF 35 HCAPLUS COPYRIGHT 2005 ACS on STN

AN 2002:265014 HCAPLUS
 DN 136:295548
 TI **Halogen-free flame-retardant thermoplastic resin compositions**
 IN Harashina, Hatsuhiko
 PA Polyplastics Co., Ltd., Japan
 SO Jpn. Kokai Tokkyo Koho, 31 pp.
 CODEN: JKXXAF

DT Patent
 LA Japanese

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 2002105335	A2	20020410	JP 2001-226760	200107 26

PRAI JP 2000-225244 A 20000726

AB The compns. useful for molding contain (A) thermoplastic resins and (B) **fireproofing** agents which comprise polyphenylene oxide resins, phosphate esters and salts of N-contg. cyclic compds. with H₂SO₄, sulfonic acid or/and boric acid. Thus, a compn. contg. Duranex (PBT) 70, poly(2,6-dimethyl-1,4-phenylene oxide) 30, PX 200 (a phosphate-type **fireproofing** agent) 18, Apinon 901 (melamine sulfate type **fireproofing** agent) 15 parts and other additives gave injection molded test pieces with UL94 flammability rating V 0 and no blooming.

IC ICM C08L101-00
 ICS C08J005-00; C08K005-34; C08K005-521; C08L071-12; C09K021-10;
 C09K021-12

CC 37-3 (Plastics Manufacture and Processing)

ST blooming redn **halogen free flame**
 retardant thermoplastic resin molding; melamine sulfate
fireproofing agent thermoplastic resin molding compn;
 polyester polyoxyphenylene **flame** retardant thermoplastic
 resin molding compn; sulfonic acid boric acid compn **flame**
 retardant thermoplastic molding

IT **Fireproofing** agents
 (**halogen-free flame**-retardant
 thermoplastic resin compns.)

IT Polyoxyphenylenes
 RL: MOA (Modifier or additive use); POF (Polymer in formulation);
 PRP (Properties); TEM (Technical or engineered material use); USES
 (Uses)
 (**halogen-free flame**-retardant
 thermoplastic resin compns.)

IT Epoxy resins, properties
 Polycarbonates, properties
 Polyesters, properties
 Polymer blends
 RL: POF (Polymer in formulation); PRP (Properties); TEM (Technical
 or engineered material use); USES (Uses)
 (**halogen-free flame**-retardant
 thermoplastic resin compns.)

IT 9003-53-6, GP-G 200C
 RL: POF (Polymer in formulation); PRP (Properties); TEM (Technical

or engineered material use); USES (Uses)
 (Toyo Styrol GP 14L; **halogen-free**
flame-retardant thermoplastic resin compns.)

IT 364728-71-2, MMS 200
 RL: MOA (Modifier or additive use); USES (Uses)
 (**fireproofing agent, MMS 200; halogen-**
free flame-retardant thermoplastic resin
compns.)

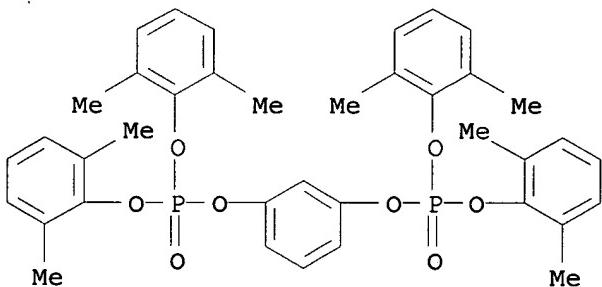
IT 5945-33-5, Fyrolflex BDP 53587-44-3, Melamine borate 57583-54-7,
 Reofos RDP 84962-53-8, Apinon 901 124784-27-6, PX 201
 139189-30-3, PX 200 147263-99-8, PX 202
 RL: MOA (Modifier or additive use); USES (Uses)
 (**fireproofing agent; halogen-free**
flame-retardant thermoplastic resin compns.)

IT 24938-67-8, YPK-100F 25134-01-4, Poly(2,6-dimethyl-1,4-phenylene oxide)
 RL: MOA (Modifier or additive use); POF (Polymer in formulation);
 PRP (Properties); TEM (Technical or engineered material use); USES
 (Uses)
 (**halogen-free flame-retardant**
thermoplastic resin compns.)

IT 9003-54-7, Cevian JD 9003-56-9, Cevian DP 611
 24936-68-3, Panlite L 1225, properties 24968-12-5,
 Poly(butylene terephthalate) 25037-45-0, Bisphenol A-carbonic acid
 copolymer 25038-59-9, Bellpet EFG 10, properties
 25068-38-6, Pheno Tohto YP 50 26062-94-2, Butylene
 glycol-terephthalic acid copolymer 26590-50-1, U-Polymer
 U-100 30580-17-7, Butylene glycol-isophthalic
 acid-terephthalic acid copolymer 117313-45-8, Epikote 1004K
 RL: POF (Polymer in formulation); PRP (Properties); TEM (Technical
 or engineered material use); USES (Uses)
 (**halogen-free flame-retardant**
thermoplastic resin compns.)

IT 139189-30-3, PX 200
 RL: MOA (Modifier or additive use); USES (Uses)
 (**fireproofing agent; halogen-free**
flame-retardant thermoplastic resin compns.)

RN 139189-30-3 HCPLUS
 CN Phosphoric acid, 1,3-phenylene tetrakis(2,6-dimethylphenyl) ester
 (9CI) (CA INDEX NAME)



IT 9003-54-7, Cevian JD 9003-56-9, Cevian DP 611
 24968-12-5, Poly(butylene terephthalate) 25038-59-9

, Bellpet EFG 10, properties 26062-94-2, Butylene glycol-terephthalic acid copolymer 26590-50-1, U-Polymer U-100 30580-17-7, Butylene glycol-isophthalic acid-terephthalic acid copolymer
 RL: POF (Polymer in formulation); PRP (Properties); TEM (Technical or engineered material use); USES (Uses)
 (halogen-free flame-retardant thermoplastic resin compns.)

RN 9003-54-7 HCPLUS

CN 2-Propenenitrile, polymer with ethenylbenzene (9CI) (CA INDEX NAME)

CM 1

CRN 107-13-1

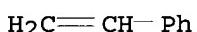
CMF C3 H3 N



CM 2

CRN 100-42-5

CMF C8 H8



RN 9003-56-9 HCPLUS

CN 2-Propenenitrile, polymer with 1,3-butadiene and ethenylbenzene (9CI) (CA INDEX NAME)

CM 1

CRN 107-13-1

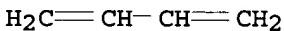
CMF C3 H3 N



CM 2

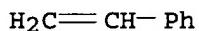
CRN 106-99-0

CMF C4 H6

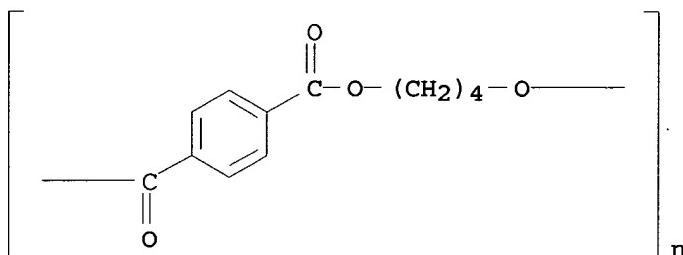


CM 3

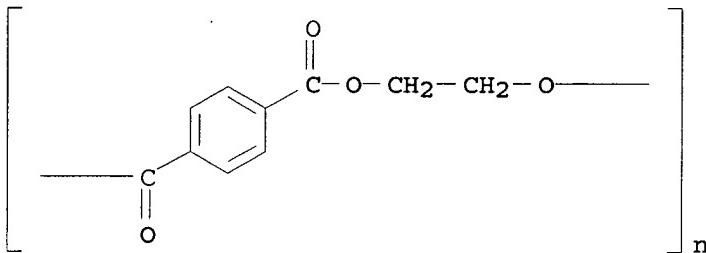
CRN 100-42-5
 CMF C8 H8



RN 24968-12-5 HCPLUS
 CN Poly(oxy-1,4-butanediylloxycarbonyl-1,4-phenylenecarbonyl) (9CI) (CA
 INDEX NAME)



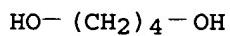
RN 25038-59-9 HCPLUS
 CN Poly(oxy-1,2-ethanediylloxycarbonyl-1,4-phenylenecarbonyl) (9CI) (CA
 INDEX NAME)



RN 26062-94-2 HCPLUS
 CN 1,4-Benzeneddicarboxylic acid, polymer with 1,4-butanediol (9CI) (CA
 INDEX NAME)

CM 1

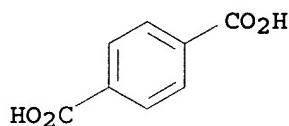
CRN 110-63-4
 CMF C4 H10 O2



CM 2

CRN 100-21-0

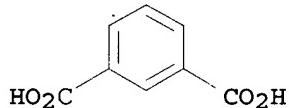
CMF C8 H6 O4



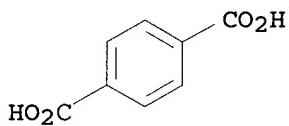
RN 26590-50-1 HCAPLUS

CN 1,3-Benzenedicarboxylic acid, polymer with 1,4-benzenedicarboxylic acid and 4,4'-(1-methylethyldene)bis[phenol] (9CI) (CA INDEX NAME)

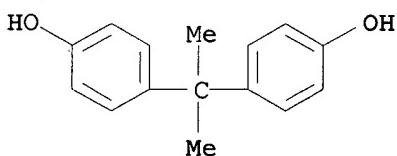
CM 1

CRN 121-91-5
CMF C8 H6 O4

CM 2

CRN 100-21-0
CMF C8 H6 O4

CM 3

CRN 80-05-7
CMF C15 H16 O2

RN 30580-17-7 HCAPLUS

CN 1,3-Benzenedicarboxylic acid, polymer with 1,4-benzenedicarboxylic

SSastri 10/728,334

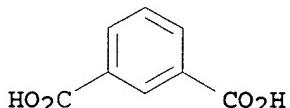
10/03/2005

acid and 1,4-butanediol (9CI) (CA INDEX NAME)

CM 1

CRN 121-91-5

CMF C8 H6 O4



CM 2

CRN 110-63-4

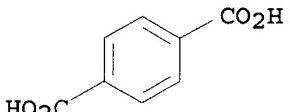
CMF C4 H10 O2

HO—(CH₂)₄—OH

CM 3

CRN 100-21-0

CMF C8 H6 O4



L50 ANSWER 20 OF 35 HCPLUS COPYRIGHT 2005 ACS on STN
AN 2002:265012 HCPLUS
DN 136:295593
TI Fire-resistant thermoplastic resin compositions containing nonhalogen fire retardants
IN Harashina, Hatsuhiro
PA Polyplastics Co., Ltd., Japan
SO Jpn. Kokai Tokkyo Koho, 30 pp.
CODEN: JKXXAF
DT Patent
LA Japanese
FAN.CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
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PI JP 2002105334	A2	20020410	JP 2001-226759	200107

PRAI JP 2000-225245 A 20000726

AB Title compns. comprise (A) thermoplastic resins and (B) fire retardants comprising polyphenylene oxide type resins, phosphate esters, and polyphosphoric acid amides. Thus, a compn. comprising Duranex 70, poly(2,6-dimethyl-1,4-phenylene) oxide 30, PX 200 15, Sumisafe PM 15, Irganox 1010 0.3, ADK Stab PEP 36 0.3, and polytetrafluoroethylene 0.5 parts gave good fire and blooming resistance.

IC ICM C08L101-00
ICS C08J005-00; C08K005-521; C08K005-5399; C08L071-12; C08L085-02;
C09K021-12

CC 37-6 (Plastics Manufacture and Processing)
Section cross-reference(s): 38

ST fire resistant thermoplastic compn nonhalogen prepns; polyphenylene oxide phosphate polyphosphoric acid amide fire retardant

IT Polyphosphoric acids
RL: MOA (Modifier or additive use); USES (Uses)
(amides, fire retardant; fire-resistant thermoplastic resin compns. contg. nonhalogen fire retardants)

IT Polyphosphoric acids
RL: MOA (Modifier or additive use); USES (Uses)
(ammonium salts, Exolit AP 462, fire retardant; fire-resistant thermoplastic resin compns. contg. nonhalogen fire retardants)

IT Polyoxyphenylenes
RL: MOA (Modifier or additive use); USES (Uses)
(fire retardant; fire-resistant thermoplastic resin compns.
contg. nonhalogen fire retardants)

IT Fire-resistant materials
Fireproofing agents
(fire-resistant thermoplastic resin compns. contg. nonhalogen fire retardants)

IT Acrylic polymers, uses
Polyamides, uses
Polyesters, uses
Polyolefins
RL: POF (Polymer in formulation); TEM (Technical or engineered material use); USES (Uses)
(fire-resistant thermoplastic resin compns. contg. nonhalogen fire retardants)

IT Molded plastics, uses
RL: TEM (Technical or engineered material use); USES (Uses)
(fire-resistant thermoplastic resin compns. contg. nonhalogen fire retardants)

IT Vinyl compounds, uses
RL: POF (Polymer in formulation); TEM (Technical or engineered material use); USES (Uses)
(polymers; fire-resistant thermoplastic resin compns. contg.
nonhalogen fire retardants)

IT Plastics, uses
RL: POF (Polymer in formulation); TEM (Technical or engineered material use); USES (Uses)
(thermoplastics; fire-resistant thermoplastic resin compns.
contg. nonhalogen fire retardants)

IT 99550-96-6, Taien S
RL: MOA (Modifier or additive use); USES (Uses)

(fire retardant, optionally surface treated with epoxy resin; fire-resistant thermoplastic resin compns. contg. nonhalogen fire retardants)

IT 66813-75-0, Sumisafe PM

RL: MOA (Modifier or additive use); USES (Uses)
(fire retardant, optionally surface treated with phenolic resin; fire-resistant thermoplastic resin compns. contg. nonhalogen fire retardants)

IT 5945-33-5, Fyrolflex BDP 24938-67-8, YPX 100F 25134-01-4,
2,6-Dimethyl phenol homopolymer 57583-54-7,
Reofos RDP 124784-27-6, PX 201 139189-30-3, PX 200
147263-99-8, PX 202

RL: MOA (Modifier or additive use); USES (Uses)
(fire retardant; fire-resistant thermoplastic resin compns. contg. nonhalogen fire retardants)

IT 55097-77-3

RL: MOA (Modifier or additive use); USES (Uses)
(fire-resistant thermoplastic resin compns. contg. nonhalogen fire retardants)

IT 24968-12-5, Duranex 25038-59-9, Bellpet EFG 10, uses 26062-94-2
30580-17-7, 1,4-Butanediol-isophthalic acid-terephthalic acid copolymer

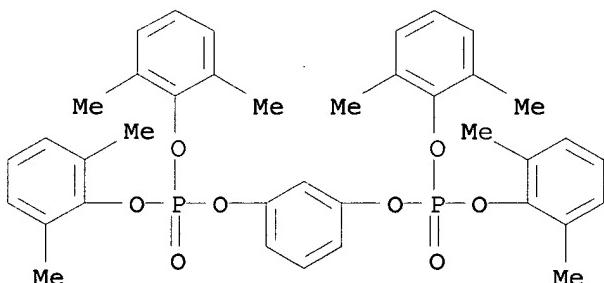
RL: POF (Polymer in formulation); TEM (Technical or engineered material use); USES (Uses)
(fire-resistant thermoplastic resin compns. contg. nonhalogen fire retardants)

IT 139189-30-3, PX 200

RL: MOA (Modifier or additive use); USES (Uses)
(fire retardant; fire-resistant thermoplastic resin compns. contg. nonhalogen fire retardants)

RN 139189-30-3 HCAPLUS

CN Phosphoric acid, 1,3-phenylene tetrakis(2,6-dimethylphenyl) ester
(9CI) (CA INDEX NAME)



L50 ANSWER 21 OF 35 HCAPLUS COPYRIGHT 2005 ACS on STN

AN 2002:147808 HCAPLUS

DN 136:200986

TI Antistatic agent compositions for plastics with long service life

IN Nakahara, Yutaka; Horinouchi, Masatoshi

PA Asahi Denka Kogyo K. K., Japan

SO Jpn. Kokai Tokkyo Koho, 15 pp.

CODEN: JKXXAF

DT Patent
 LA Japanese
 FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 2002060734	A2	20020226	JP 2001-166487	200106 01

PRAI JP 2000-174148 A 20000609

OS MARPAT 136:200986

AB The compns. contain (A) compd. having [XCH₂] units [X = optionally halogen- or hydrocarbyl-substituted alkoxylated phenol or its ether, ester, isocyanate or anionic hydrophilic group-blocked products], and (B) low mol.-wt. org. anionic compds., and optionally (poly)phosphate compds. Thus, a resin compn. contg. PET 100, ADK Stab AO 60 (antioxidant) 0.1, ADK Stab 2112 (antioxidant) 0.1 and compd. [XCH₂]₂₀ [X = 30:1 ethoxylated p-(2-phenylisopropylphenol)] 5 parts gave molded test pieces with surface resistivities 8.9x10¹², 1.4x10¹², 2.0x10¹² and 2.0x10¹² Ω/box 10 min after molding, 7 days after molding, 7 days after molding and washing and 14 days after molding and heating at 80°, resp.

IC ICM C09K003-16
 ICS C09K003-16; C08K005-00; C08K005-521; C08L061-14; C08L101-00;
 C09K021-12

CC 37-2 (Plastics Manufacture and Processing)

ST plastic molding antistatic agent ethoxylated phenolic resin service life

IT Polycarbonates, properties
 RL: POF (Polymer in formulation); PRP (Properties); TEM (Technical or engineered material use); USES (Uses)
 (ABS alloy; antistatic agent compns. for plastics with long service life)

IT Sulfonic acids, uses
 RL: MOA (Modifier or additive use); USES (Uses)
 (alkanesulfonic, salts, C₉-13, antistatic co-agent; antistatic agent compns. for plastics with long service life)

IT Antistatic agents
 (antistatic agent compns. for plastics with long service life)

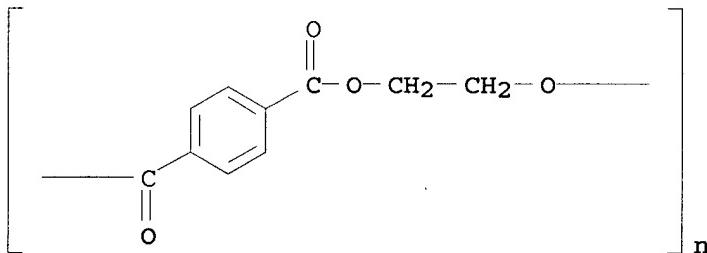
IT Polyesters, properties
 Polymer blends
 RL: POF (Polymer in formulation); PRP (Properties); TEM (Technical or engineered material use); USES (Uses)
 (antistatic agent compns. for plastics with long service life)

IT Polyamides, properties
 RL: POF (Polymer in formulation); PRP (Properties); TEM (Technical or engineered material use); USES (Uses)
 (polypropylene blends; antistatic agent compns. for plastics with long service life)

IT 25038-59-9, PET polyester, properties
 RL: POF (Polymer in formulation); PRP (Properties); TEM (Technical or engineered material use); USES (Uses)
 (antistatic agent compns. for plastics with long service life)

IT 124895-94-9, Ethylene oxide-formaldehyde-p-nonylphenol-propylene oxide graft copolymer 237391-36-5,
 p-Cumylphenol-Ethylene oxide-formaldehyde graft copolymer

- 401620-63-1, p-Butylphenol-ethylene oxide-formaldehyde graft copolymer methyl ether 401620-64-2, Ethylene oxide-formaldehyde-p-nonylphenol graft copolymer octanoate ester**
RL: MOA (Modifier or additive use); PRP (Properties); USES (Uses)
 (antistatic agent; antistatic agent compns. for plastics with long service life)
- IT 577-11-7, Sodium di-2-ethylhexyl sulfosuccinate 7631-86-9D,**
Tokusil NP, alkyl ether, uses 25155-30-0, Sodium dodecylbenzenesulfonate 27177-77-1, Potassium dodecylbenzenesulfonate 41675-87-0D, Polyethylene glycol monosulfate sodium salt, C12-13 alkyl ether 69980-69-4
RL: MOA (Modifier or additive use); USES (Uses)
 (antistatic co-agent; antistatic agent compns. for plastics with long service life)
- IT 9003-07-0, Polypropylene**
RL: POF (Polymer in formulation); PRP (Properties); TEM (Technical or engineered material use); USES (Uses)
 (nylon blends; antistatic agent compns. for plastics with long service life)
- IT 9003-56-9, ABS resin**
RL: POF (Polymer in formulation); PRP (Properties); TEM (Technical or engineered material use); USES (Uses)
 (polycarbonate alloy; antistatic agent compns. for plastics with long service life)
- IT 6683-19-8, ADK Stab AO 60 31570-04-4, ADK Stab 2112**
139189-30-3, ADK Stab FP 500
RL: MOA (Modifier or additive use); USES (Uses)
 (stabilizer; antistatic agent compns. for plastics with long service life)
- IT 25038-59-9, PET polyester, properties**
RL: POF (Polymer in formulation); PRP (Properties); TEM (Technical or engineered material use); USES (Uses)
 (antistatic agent compns. for plastics with long service life)
- RN 25038-59-9 HCPLUS**
- CN Poly(oxy-1,2-ethanediylloxycarbonyl-1,4-phenylene carbonyl) (9CI) (CA INDEX NAME)**



- IT 124895-94-9, Ethylene oxide-formaldehyde-p-nonylphenol-propylene oxide graft copolymer 237391-36-5,**
p-Cumylphenol-Ethylene oxide-formaldehyde graft copolymer
401620-63-1, p-Butylphenol-ethylene oxide-formaldehyde graft copolymer methyl ether 401620-64-2, Ethylene oxide-formaldehyde-p-nonylphenol graft copolymer octanoate ester
RL: MOA (Modifier or additive use); PRP (Properties); USES (Uses)

SSastri 10/728,334

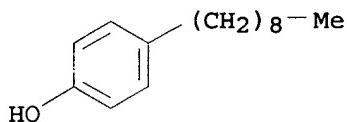
10/03/2005

(antistatic agent; antistatic agent compns. for plastics with long service life)

RN 124895-94-9 HCPLUS
CN Formaldehyde, polymer with n
graft (9CI) (CA INDEX NAME)

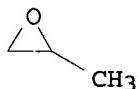
CM 1

CRN 104-40-5
CMF C15 H24 O



CM 2

CRN 75-56-9
CMF C3 H6 O



CM 3

CRN 75-21-8
CMF C2 H4 O



CM 4

CRN 50-00-0
CMF C H₂ O

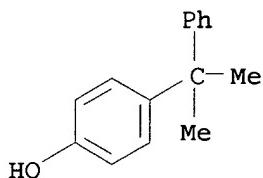
$$\text{H}_2\text{C}=\text{O}$$

RN 237391-36-5 HCAPLUS

CN Formaldehyde, polymer with 4-(1-methyl-1-phenylethyl)phenol and oxirane, graft (9CI) (CA INDEX NAME)

CM 1

CRN 599-64-4
 CMF C15 H16 O



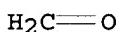
CM 2

CRN 75-21-8
 CMF C2 H4 O



CM 3

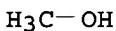
CRN 50-00-0
 CMF C H2 O



RN 401620-63-1 HCPLUS
 CN Formaldehyde, polymer with 4-butylphenol and oxirane, methyl ether,
 graft (9CI) (CA INDEX NAME)

CM 1

CRN 67-56-1
 CMF C H4 O

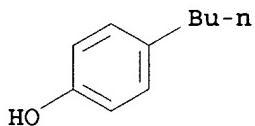


CM 2

CRN 401620-62-0
 CMF (C10 H14 O . C2 H4 O . C H2 O)x
 CCI PMS

CM 3

CRN 1638-22-8
 CMF C10 H14 O



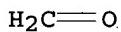
CM 4

CRN 75-21-8
 CMF C2 H4 O



CM 5

CRN 50-00-0
 CMF C H2 O



RN 401620-64-2 HCPLUS
 CN Formaldehyde, polymer with 4-nonylphenol and oxirane, octanoate, graft (9CI) (CA INDEX NAME)

CM 1

CRN 124-07-2
 CMF C8 H16 O2

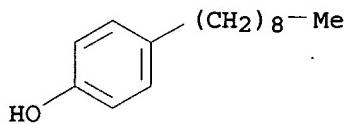


CM 2

CRN 106413-19-8
 CMF (C15 H24 O . C2 H4 O . C H2 O)x
 CCI PMS

CM 3

CRN 104-40-5
 CMF C15 H24 O



CM 4

CRN 75-21-8
CMF C2 H4 O



CM 5

CRN 50-00-0
CMF C H₂ O

$$\text{H}_2\text{C}=\text{O}$$

IT 9003-56-9, ABS resin

RL: POF (Polymer in formulation); PRP (Properties); TEM (Technical or engineered material use); USES (Uses)
(polycarbonate alloy; antistatic agent compns. for plastics with long service life)

RN 9003-56-9 HCAPLUS

CN 2-Propenenitrile, polymer with 1,3-butadiene and ethenylbenzene (9CI) (CA INDEX NAME)

CM 1

CRN 107-13-1
CMF C3 H3 N

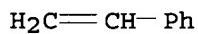
$$\text{H}_2\text{C}=\text{CH}-\text{C}\equiv\text{N}$$

CM 2

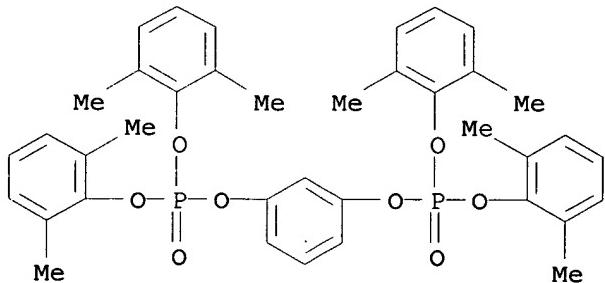
CRN 106-99-0
CMF C4 H6

$$\text{H}_2\text{C}=\text{CH}-\text{CH}=\text{CH}_2$$

CM 3

CRN 100-42-5
CMF C8 H8

IT 139189-30-3, ADK Stab FP 500
 RL: MOA (Modifier or additive use); USES (Uses)
 (stabilizer; antistatic agent compns. for plastics with long
 service life)
 RN 139189-30-3 HCPLUS
 CN Phosphoric acid, 1,3-phenylene tetrakis(2,6-dimethylphenyl) ester
 (9CI) (CA INDEX NAME)



L50 ANSWER 22 OF 35 HCPLUS COPYRIGHT 2005 ACS on STN
 AN 2002:129291 HCPLUS
 DN 136:185027
 TI Thermosetting resin adhesive composition containing phosphorus-based fireproofing agent for semiconductor device and cover lay film, adhesive sheet, and flexible printed circuit board using the composition

IN Yamamoto, Tetsuya; Suzuki, Yoshio
 PA Toray Industries, Inc., Japan
 SO Jpn. Kokai Tokkyo Koho, 9 pp.
 CODEN: JKXXAF

DT Patent
 LA Japanese
 FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 2002053833	A2	20020219	JP 2000-238496	200008 07

PRAI JP 2000-238496 20000807
 OS MARPAT 136:185027
 AB The halogen-free adhesive compn., showing

storage stability, solder heat resistance, etc., contains 100 parts of an epoxy resin, 20-200 parts of a carboxy-contg. acrylonitrile-butadiene rubber, 0.01-50 parts of a hardener, 10-100 parts inorg. particles having aminosilanes on the surface, and a P-type fireproofing agent. The adhesive sheet is that having the adhesive layer sandwiched between release films. The cover lay film is that using the adhesive compn. The flexible printed circuit board has an elec. insulating plastic film and a Cu foil laminated through the adhesive compn. Thus, 40 parts of a MePh dispersion of powd. SiO₂ (Admafine SO25R) treated with 2% 3-aminopropyltriethoxysilane, 50 parts carboxy-contg. nitrile rubber (Nipol 1072), 75 parts P-contg. epoxy resin (FX-279BEK75), 25 parts Br-free epoxy resin (Epikote 834), 5 parts polyester (Vylon 300), 8 parts 3,3'-diaminodiphenyl sulfone, 0.4 part BF₃-monoethylamine complex, and MEK were mixed to give the adhesive compn., which was applied on a polyimide (Kapton 100H) film, dried at 150° for 5 min, and laminated with a release paper to give a cover lay film showing UL-94 flame retardance V-0.

- IC ICM C09J163-00
 ICS B32B007-12; B32B015-08; C08G059-40; C09J007-00; C09J007-02;
 C09J011-06; C09J113-00; C09K021-12; C09K021-14
- CC 38-3 (Plastics Fabrication and Uses)
 Section cross-reference(s): 76
- ST thermosetting resin adhesive printed circuit board; phosphorus fireproofing agent epoxy resin adhesive; carboxy contg nitrile rubber epoxy resin; aminosilane surface treated inorg powder adhesive; flexible printed circuit board thermosetting adhesive; solder heat resistance adhesive circuit board; storage stability epoxy resin adhesive
- IT Nitrile rubber, uses
 RL: IMF (Industrial manufacture); POF (Polymer in formulation); PRP (Properties); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
 (carboxy-contg., reaction product with epoxy resin and polyester; thermosetting epoxy resin-based adhesive contg. phosphorus-type fireproofing agent for flexible printed circuit board)
- IT Plastic films
 (elec. insulating; thermosetting epoxy resin-based adhesive contg. phosphorus-type fireproofing agent for)
- IT Printed circuit boards
 (flexible; thermosetting epoxy resin-based adhesive contg. phosphorus-type fireproofing agent for flexible printed circuit board)
- IT Crosslinking agents
 Crosslinking catalysts
 (in thermosetting epoxy resin-based adhesive contg. phosphorus-type fireproofing agent for flexible printed circuit board)
- IT Dielectric films
 (plastic; thermosetting epoxy resin-based adhesive contg. phosphorus-type fireproofing agent for)
- IT Polyesters, uses
 RL: IMF (Industrial manufacture); POF (Polymer in formulation); PRP (Properties); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
 (reaction product with carboxy-contg. nitrile rubber and epoxy

- resin; thermosetting epoxy resin-based adhesive contg. phosphorus-type fireproofing agent for flexible printed circuit board)
- IT Epoxy resins, uses
 RL: IMF (Industrial manufacture); POF (Polymer in formulation); PRP (Properties); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
 (reaction product with carboxy-contg. nitrile rubber and polyester; thermosetting epoxy resin-based adhesive contg. phosphorus-type fireproofing agent for flexible printed circuit board)
- IT Semiconductor device fabrication
 (thermosetting epoxy resin-based adhesive contg. phosphorus-type fireproofing agent for)
- IT Fire-resistant materials
 Fireproofing agents
 (thermosetting epoxy resin-based adhesive contg. phosphorus-type fireproofing agent for flexible printed circuit board)
- IT 75-23-0, Boron trifluoride-monoethylamine complex
 RL: CAT (Catalyst use); USES (Uses)
 (crosslinking accelerator; thermosetting epoxy resin-based adhesive contg. phosphorus-type fireproofing agent for flexible printed circuit board)
- IT 7440-50-8, Copper, miscellaneous
 RL: MSC (Miscellaneous)
 (foils; thermosetting epoxy resin-based adhesive contg. phosphorus-type fireproofing agent for)
- IT 919-30-2, 3-Aminopropyltriethoxysilane 3068-76-6,
 3-Phenylaminopropyltrimethoxysilane
 RL: NUU (Other use, unclassified); USES (Uses)
 (inorg. powder surface-treated with; in thermosetting epoxy resin-based adhesive contg. phosphorus-type fireproofing agent for flexible printed circuit board)
- IT 9003-18-3P
 RL: IMF (Industrial manufacture); POF (Polymer in formulation); PRP (Properties); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
 (nitrile rubber, carboxy-contg., reaction product with epoxy resin and polyester; thermosetting epoxy resin-based adhesive contg. phosphorus-type fireproofing agent for flexible printed circuit board)
- IT 60676-86-0, Admafine SO25R
 RL: MOA (Modifier or additive use); USES (Uses)
 (powd., aminosilane-treated; in thermosetting epoxy resin-based adhesive contg. phosphorus-type fireproofing agent for flexible printed circuit board)
- IT 399508-04-4P
 RL: IMF (Industrial manufacture); POF (Polymer in formulation); PRP (Properties); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
 (thermosetting epoxy resin-based adhesive contg. phosphorus-type fireproofing agent for flexible printed circuit board)
- IT 139189-30-3
 RL: MOA (Modifier or additive use); USES (Uses)
 (thermosetting epoxy resin-based adhesive contg. phosphorus-type fireproofing agent for flexible printed circuit board)

IT 9003-18-3P

RL: IMF (Industrial manufacture); POF (Polymer in formulation); PRP (Properties); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
 (nitrile rubber, carboxy-contg., reaction product with epoxy resin and polyester; thermosetting epoxy resin-based adhesive contg. phosphorus-type fireproofing agent for flexible printed circuit board)

RN 9003-18-3 HCPLUS

CN 2-Propenenitrile, polymer with 1,3-butadiene (9CI) (CA INDEX NAME)

CM 1

CRN 107-13-1

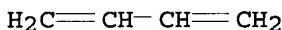
CMF C3 H3 N



CM 2

CRN 106-99-0

CMF C4 H6



IT 399508-04-4P

RL: IMF (Industrial manufacture); POF (Polymer in formulation); PRP (Properties); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
 (thermosetting epoxy resin-based adhesive contg. phosphorus-type fireproofing agent for flexible printed circuit board)

RN 399508-04-4 HCPLUS

CN 1,4-Benzenedicarboxylic acid, polymer with 1,3-butadiene, (chloromethyl)oxirane, decanedioic acid, 2,2-dimethyl-1,3-propanediol, 1,2-ethanediol, FX 279BEK75, 4,4'-(1-methylethylidene)bis[phenol], 2-methyl-2-propenoic acid, 2-propenenitrile and 3,3'-sulfonylbis[benzenamine] (9CI) (CA INDEX NAME)

CM 1

CRN 386211-72-9

CMF Unspecified

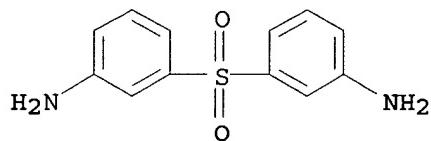
CCI PMS, MAN

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***

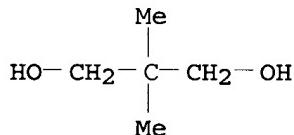
CM 2

CRN 599-61-1

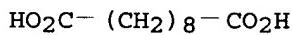
CMF C12 H12 N2 O2 S



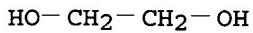
CM 3

CRN 126-30-7
CMF C5 H12 O2

CM 4

CRN 111-20-6
CMF C10 H18 O4

CM 5

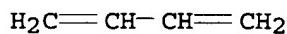
CRN 107-21-1
CMF C2 H6 O2

CM 6

CRN 107-13-1
CMF C3 H3 N

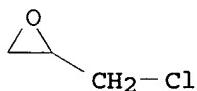
CM 7

CRN 106-99-0
 CMF C4 H6



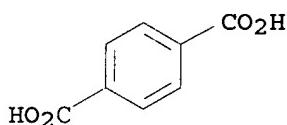
CM 8

CRN 106-89-8
 CMF C3 H5 Cl O



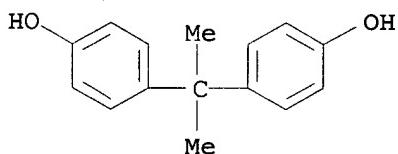
CM 9

CRN 100-21-0
 CMF C8 H6 O4



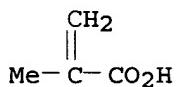
CM 10

CRN 80-05-7
 CMF C15 H16 O2



CM 11

CRN 79-41-4
 CMF C4 H6 O2

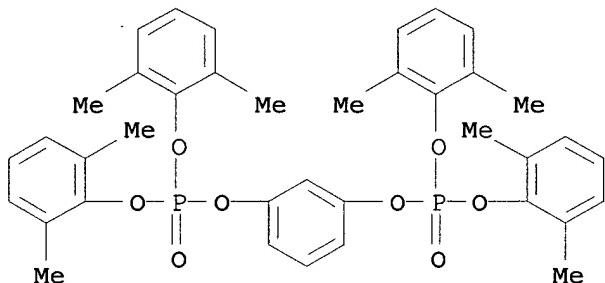


IT 139189-30-3

RL: MOA (Modifier or additive use); USES (Uses)
 (thermosetting epoxy resin-based adhesive contg. phosphorus-type
 fireproofing agent for flexible printed circuit board)

RN 139189-30-3 HCAPLUS

CN Phosphoric acid, 1,3-phenylene tetrakis(2,6-dimethylphenyl) ester
 (9CI) (CA INDEX NAME)



L50 ANSWER 23 OF 35 HCAPLUS COPYRIGHT 2005 ACS on STN

AN 2001:904365 HCAPLUS

DN 136:38335

TI Flame-retardant resin composition

IN Harashina, Hatsuhiiko

PA Polyplastics Co., Ltd., Japan

SO PCT Int. Appl., 90 pp.

CODEN: PIXXD2

DT Patent

LA Japanese

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	WO 2001094472	A1	20011213	WO 2001-JP4655	200106 01
	W: CN, DE, JP DE 10196299	T	20030508	DE 2001-10196299	200106 01

PRAI JP 2000-166872 A 20000602
 WO 2001-JP4655 W 20010601

AB The flame-retardant resin comprises a base resin, a calcium hydrogen phosphate and ≥1 of the flame retardant from a phosphorus compd., a nitrogen compd., a boron compd., a silicon compd., or a metal compd.. Thus PBT (Duranex) 100, calcium hydrogen phosphate 40, 1,3-phenylene tetrakis(2,6-dimethylphenyl) phosphate (PX 200)

75, antioxidant Irganox 1010 0.3 and stabilizer PEP 36 0.3 parts formed a compn., showing UL 94 V-1.

IC ICM C08L101-00
 ICS C08K003-32; C08K005-49; C08K005-34; C08K003-34; C08K003-38;
 C08K003-20

CC 37-6 (Plastics Manufacture and Processing)
 ST calcium hydrogen phosphate flame retardant compn
 IT Epoxy resins, uses
 RL: POF (Polymer in formulation); USES (Uses)
 (arom. epoxy resins; flame-retardant resin compn.)

IT Antioxidants
 Fire-resistant materials
 Fireproofing agents
 Stabilizing agents
 (flame-retardant resin compn.)

IT Phenolic resins, uses
 Polyphosphates
 Polysiloxanes, uses
 RL: MOA (Modifier or additive use); USES (Uses)
 (flame-retardant resin compn.)

IT Acrylic polymers, uses
 RL: POF (Polymer in formulation); USES (Uses)
 (flame-retardant resin compn.)

IT Fluoropolymers, uses
 RL: POF (Polymer in formulation); USES (Uses)
 (flame-retardant resin compn.)

IT Polyamides, uses
 RL: POF (Polymer in formulation); USES (Uses)
 (flame-retardant resin compn.)

IT Polycarbonates, uses
 RL: POF (Polymer in formulation); USES (Uses)
 (flame-retardant resin compn.)

IT Polyolefins
 RL: POF (Polymer in formulation); USES (Uses)
 (flame-retardant resin compn.)

IT Polyoxymethylenes, uses
 RL: POF (Polymer in formulation); USES (Uses)
 (flame-retardant resin compn.)

IT Polyoxyphenylenes
 RL: POF (Polymer in formulation); USES (Uses)
 (flame-retardant resin compn.)

IT Polyamides, properties
 Polyesters, properties
 RL: POF (Polymer in formulation); PRP (Properties); USES (Uses)
 (flame-retardant resin compn.)

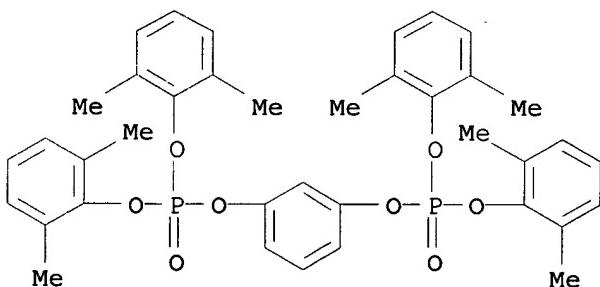
IT Phenols, uses
 RL: MOA (Modifier or additive use); USES (Uses)
 (hindered; flame-retardant resin compn.)

IT Vinyl compounds, uses
 RL: POF (Polymer in formulation); USES (Uses)
 (polymers; flame-retardant resin compn.)

IT Polyoxymethylenes, properties
 RL: POF (Polymer in formulation); PRP (Properties); USES (Uses)
 (polyoxyalkylene-; flame-retardant resin compn.)

IT Polyoxyalkylenes, properties
 RL: POF (Polymer in formulation); PRP (Properties); USES (Uses)

(polyoxymethylene-; flame-retardant resin compn.)
IT 9003-54-7, SAN polymer
RL: POF (Polymer in formulation); PRP (Properties); USES (Uses)
(Cevian JD; flame-retardant resin compn.)
IT 57-13-6, Urea, uses 471-34-1, Calcium carbonate, uses 1309-42-8,
Kisuma 5E 5945-33-5, Fyrolflex BDP 6303-21-5D, Phosphinic acid,
derivs. 6683-19-8, Irganox 1010 7664-38-2D, Phosphoric acid,
esters or ester-amides 7723-14-0, Phosphorus, uses 7757-93-9,
Calcium hydrogen phosphate 7758-23-8, Calcium dihydrogen phosphate
7758-87-4, Calcium phosphate 11097-59-9, DHT 4A 12767-90-7,
Firebreak ZB 14807-96-6, Talc, uses 15221-07-5, Phosphoric acid,
calcium salt (2:1) dihydrate 22535-90-6, CTU-guanamine
34670-63-8, SP 703 37640-57-6, MC 610 57583-54-7, Reofos RDP
80693-00-1, PEP 36 99752-88-2, Sumilite PR 53195 124784-27-6, PX
201 139189-30-3, PX 200 153550-59-5, Sandostab P-EPQ
172827-17-7, Sumilite PR 53647 243144-78-7, PMP 100 304853-27-8,
Phenolite KA 7054 380366-74-5, PMP 200
RL: MOA (Modifier or additive use); USES (Uses)
(flame-retardant resin compn.)
IT 9003-53-6, GP-G 200C 24936-68-3, Panlite L1225, properties
24938-67-8, Poly(2,6-dimethyl-1,4-phenylene) oxide 24968-12-5,
Duranex 25037-45-0, Bisphenol A-carbonic acid copolymer
25038-59-9, Bellpet EFG 10, properties 25134-01-4,
Poly(2,6-dimethyl-1,4-phenylene) oxide 25718-70-1, Adipic
acid-1,3-xylylenediamine copolymer 25805-74-7, Reny MXD 6
26062-94-2, PBT monomer-based 30580-17-7, Butylene
glycol-isophthalic acid-terephthalic acid copolymer 32131-17-2,
Nylon 66, properties 55097-77-3, 1,4-Butanediol-isophthalic
acid-terephthalic acid copolymer, SRU 126730-46-9, Duracon M 90-44
RL: POF (Polymer in formulation); PRP (Properties); USES (Uses)
(flame-retardant resin compn.)
IT 139189-30-3, PX 200
RL: MOA (Modifier or additive use); USES (Uses)
(flame-retardant resin compn.)
RN 139189-30-3 HCPLUS
CN Phosphoric acid, 1,3-phenylene tetrakis(2,6-dimethylphenyl) ester
(9CI) (CA INDEX NAME)



RE.CNT 4 THERE ARE 4 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L50 ANSWER 24 OF 35 HCPLUS COPYRIGHT 2005 ACS on STN
AN 2001:124280 HCPLUS

DN 134:179634
 TI **Halogen-free flame-retardant**
 polyester-styrene polymer blend compositions, their manufacture, and
 their moldings with reduced warpage and bleed-out
 IN Harashina, Hatsuhiko; Nakane, Toshio; Yamada, Shinya
 PA Polyplastics Co., Ltd., Japan
 SO Jpn. Kokai Tokkyo Koho, 27 pp.
 CODEN: JKXXAF

DT Patent
 LA Japanese

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 2001049096	A2	20010220	JP 2000-166850	200006 02

PRAI JP 1999-155706 A 19990602
 AB Title compns., useful for elec. and electronic devices, machinery,
 and automobile parts, contain **flame retardants** comprising
 P compds. and OH- and/or NH₂-contg. arom. polymers, arom. nylons,
 polycarbonates, polyarylates, arom. epoxy resins, and/or
 polyphenylene oxides. A molding comprising Duranex [poly(butylene
 terephthalate)] 100, Cevian DP 611 (acrylonitrile-styrene copolymer)
 20, Nova Excel 140 (red P) 8, and Sumilite Resin PR 53195 (novolak
 resin) 13 parts showed V-0 in UL94 burning test.

IC ICM C08L067-02
 ICS C08J005-00; C08K003-32; C08K005-521; C08K005-5313; C08L025-04;
 C08L101-00

CC 38-3 (Plastics Fabrication and Uses)
 Section cross-reference(s): 37, 76

ST polyester polystyrene blend **fireproofer** phosphorus
 novolak; arom resin **fireproofer** polyester polystyrene
 blend; polybutylene terephthalate acrylonitrile styrene copolymer
 blend; molding polyester polystyrene blend **fireproofer**
 phosphorus; **halogen free fireproofer**
 polyester polystyrene blend; nylon arom polycarbonate polyarylate
 phosphorus **fireproofer**; epoxy resin polyoxyphenylene
 phosphorus **fireproofer**; automobile elec machinery
fireproofer polyester blend

IT Phenolic resins, uses

RL: MOA (Modifier or additive use); USES (Uses)
 (aminoplast-; polyester-polystyrene blend compns. contg. P and
 arom. resins as **fireproofing agents**)

IT Epoxy resins, uses

RL: MOA (Modifier or additive use); USES (Uses)
 (arom. epoxy resins; polyester-polystyrene blend compns. contg. P
 and arom. resins as **fireproofing agents**)

IT Polyamides, uses

Polyesters, uses
 RL: MOA (Modifier or additive use); USES (Uses)
 (arom.; polyester-polystyrene blend compns. contg. P and arom.
 resins as **fireproofing agents**)

IT Styrene-butadiene rubber, uses

RL: DEV (Device component use); POF (Polymer in formulation); PRP
 (Properties); TEM (Technical or engineered material use); USES

- (Uses)
 (hydrogenated, block, triblock, Kraton G 1657X;
 polyester-polystyrene blend compns. contg. P and arom. resins as
fireproofing agents)
- IT Phenolic resins, uses
 RL: MOA (Modifier or additive use); USES (Uses)
 (novolak; polyester-polystyrene blend compns. contg. P and arom.
 resins as **fireproofing agents**)
- IT Automobiles
 (parts; polyester-polystyrene blend compns. contg. P and arom.
 resins as **fireproofing agents**)
- IT Aminoplasts
 RL: MOA (Modifier or additive use); USES (Uses)
 (phenolic; polyester-polystyrene blend compns. contg. P and arom.
 resins as **fireproofing agents**)
- IT Electric apparatus
 Fire-resistant materials
 Fireproofing agents
 Machinery
 (polyester-polystyrene blend compns. contg. P and arom. resins as
fireproofing agents)
- IT Polyesters, uses
 RL: DEV (Device component use); POF (Polymer in formulation); PRP
 (Properties); TEM (Technical or engineered material use); USES
 (Uses)
 (polyester-polystyrene blend compns. contg. P and arom. resins as
fireproofing agents)
- IT Molded plastics, uses
 Polymer blends
 RL: DEV (Device component use); PRP (Properties); TEM (Technical or
 engineered material use); USES (Uses)
 (polyester-polystyrene blend compns. contg. P and arom. resins as
fireproofing agents)
- IT Phenolic resins, uses
 Phosphates, uses
 Poly(arylenealkylenes)
 Polybenzyls
 Polycarbonates, uses
 Polyoxyphenylenes
 Polyphosphates
 RL: MOA (Modifier or additive use); USES (Uses)
 (polyester-polystyrene blend compns. contg. P and arom. resins as
fireproofing agents)
- IT 26299-47-8, Acrylonitrile-butyl acrylate-styrene copolymer
 RL: DEV (Device component use); POF (Polymer in formulation); PRP
 (Properties); TEM (Technical or engineered material use); USES
 (Uses)
 (Cevian; polyester-polystyrene blend compns. contg. P and arom.
 resins as **fireproofing agents**)
- IT 9003-53-6, Polystyrene
 RL: DEV (Device component use); POF (Polymer in formulation); PRP
 (Properties); TEM (Technical or engineered material use); USES
 (Uses)
 (Toyo Styrol GP-G 200C; polyester-polystyrene blend compns.
 contg. P and arom. resins as **fireproofing agents**)
- IT 9003-54-7, Cevian JD 9003-56-9, Cevian DP 611

24968-12-5, Duranex 25038-59-9, Bellpet EF G10,
 uses 26062-94-2 30580-17-7, 1,4-Butanediol-
 isophthalic acid-terephthalic acid copolymer
 RL: DEV (Device component use); POF (Polymer in formulation); PRP
 (Properties); TEM (Technical or engineered material use); USES
 (Uses)

(polyester-polystyrene blend compns. contg. P and arom. resins as
fireproofing agents)

IT **9003-35-4** 15541-60-3, Melamine pyrophosphate 24936-68-3,
 Panlite L1225, uses 24938-67-8, Poly(2,6-dimethyl-1,4-phenylene
 oxide) 24979-70-2, Maruka Lyncur M 25037-45-0 25068-38-6,
 Pheno Toho YP-50 25134-01-4, Poly(2,6-dimethyl-1,4-phenylene
 oxide) 25718-70-1 25805-74-7, Reny 6002 **26590-50-1**,
 U-Polymer U 100 26834-02-6, Milex XL 225 35948-25-5,
 9,10-Dihydro-9-oxa-10-phosphaphenanthrene-10-oxide 99752-88-2,
 Sumilite PR 53195 124784-27-6, PX 201 **139189-30-3**, PX 200
 172827-17-7, Sumilite Resin PR 53647 178965-58-7 243144-78-7,
 PMP 100 304853-27-8, Phenolite KA 7054

RL: MOA (Modifier or additive use); USES (Uses)

(polyester-polystyrene blend compns. contg. P and arom. resins as
fireproofing agents)

IT 7723-14-0, Phosphorus, uses
 RL: MOA (Modifier or additive use); USES (Uses)
 (red; polyester-polystyrene blend compns. contg. P and arom.
 resins as **fireproofing agents**)

IT 106107-54-4 694491-73-1
 RL: DEV (Device component use); POF (Polymer in formulation); PRP
 (Properties); TEM (Technical or engineered material use); USES
 (Uses)
 (styrene-butadiene rubber, hydrogenated, block, triblock, Kraton
 G 1657X; polyester-polystyrene blend compns. contg. P and arom.
 resins as **fireproofing agents**)

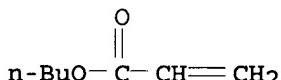
IT **26299-47-8**, Acrylonitrile-butyl acrylate-styrene copolymer
 RL: DEV (Device component use); POF (Polymer in formulation); PRP
 (Properties); TEM (Technical or engineered material use); USES
 (Uses)
 (Cevian; polyester-polystyrene blend compns. contg. P and arom.
 resins as **fireproofing agents**)

RN 26299-47-8 HCAPLUS

CN 2-Propenoic acid, butyl ester, polymer with ethenylbenzene and
 2-propenenitrile (9CI) (CA INDEX NAME)

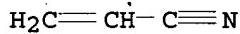
CM 1

CRN 141-32-2
 CMF C7 H12 O2



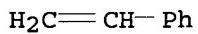
CM 2

CRN 107-13-1
 CMF C3 H3 N



CM 3

CRN 100-42-5
 CMF C8 H8



IT 9003-54-7, Cevian JD 9003-56-9, Cevian DP 611
 24968-12-5, Duranex 25038-59-9, Bellpet EF G10,
 uses 26062-94-2 30580-17-7, 1,4-Butanediol-
 isophthalic acid-terephthalic acid copolymer
 RL: DEV (Device component use); POF (Polymer in formulation); PRP
 (Properties); TEM (Technical or engineered material use); USES
 (Uses)

(polyester-polystyrene blend compns. contg. P and arom. resins as
fireproofing agents)

RN 9003-54-7 HCPLUS

CN 2-Propenenitrile, polymer with ethenylbenzene (9CI) (CA INDEX NAME)

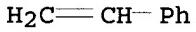
CM 1

CRN 107-13-1
 CMF C3 H3 N



CM 2

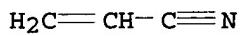
CRN 100-42-5
 CMF C8 H8



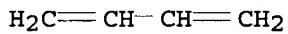
RN 9003-56-9 HCPLUS
 CN 2-Propenenitrile, polymer with 1,3-butadiene and ethenylbenzene
 (9CI) (CA INDEX NAME)

CM 1

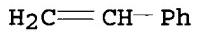
CRN 107-13-1
 CMF C3 H3 N



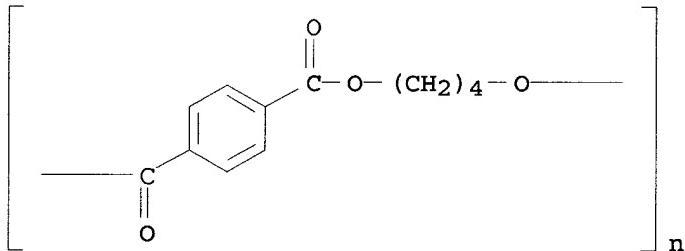
CM 2

CRN 106-99-0
CMF C4 H6

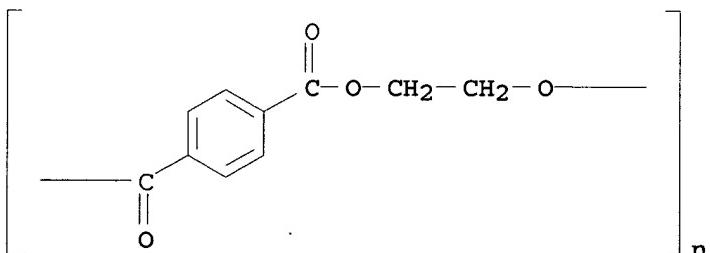
CM 3

CRN 100-42-5
CMF C8 H8

RN 24968-12-5 HCPLUS
 CN Poly(oxy-1,4-butanediylloxycarbonyl-1,4-phenylenecarbonyl) (9CI) (CA
 INDEX NAME)



RN 25038-59-9 HCPLUS
 CN Poly(oxy-1,2-ethanediylloxycarbonyl-1,4-phenylenecarbonyl) (9CI) (CA
 INDEX NAME)



RN 26062-94-2 HCPLUS

CN 1,4-Benzenedicarboxylic acid, polymer with 1,4-butanediol (9CI) (CA INDEX NAME)

CM 1

CRN 110-63-4

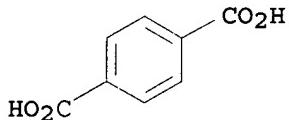
CMF C4 H10 O2

HO—(CH₂)₄—OH

CM 2

CRN 100-21-0

CMF C8 H6 O4



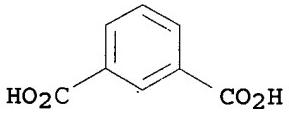
RN 30580-17-7 HCPLUS

CN 1,3-Benzenedicarboxylic acid, polymer with 1,4-benzenedicarboxylic acid and 1,4-butanediol (9CI) (CA INDEX NAME)

CM 1

CRN 121-91-5

CMF C8 H6 O4



CM 2

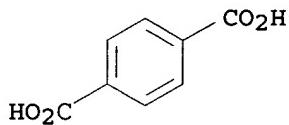
CRN 110-63-4

CMF C4 H10 O2

HO—(CH₂)₄—OH

CM 3

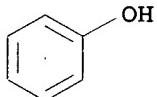
CRN 100-21-0
 CMF C8 H6 O4



IT 9003-35-4 26590-50-1, U-Polymer U 100
 139189-30-3, PX 200
 RL: MOA (Modifier or additive use); USES (Uses)
 (polyester-polystyrene blend compns. contg. P and arom. resins as
 fireproofing agents)
 RN 9003-35-4 HCPLUS
 CN Phenol, polymer with formaldehyde (9CI) (CA INDEX NAME)

CM 1

CRN 108-95-2
 CMF C6 H6 O



CM 2

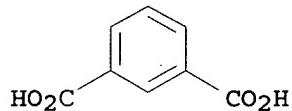
CRN 50-00-0
 CMF C H2 O

H₂C=O

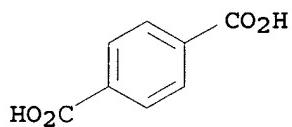
RN 26590-50-1 HCPLUS
 CN 1,3-Benzenedicarboxylic acid, polymer with 1,4-benzenedicarboxylic
 acid and 4,4'-(1-methylethylidene)bis[phenol] (9CI) (CA INDEX NAME)

CM 1

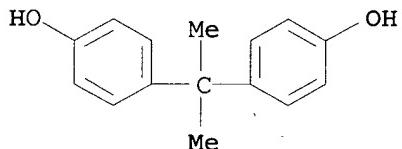
CRN 121-91-5
 CMF C8 H6 O4



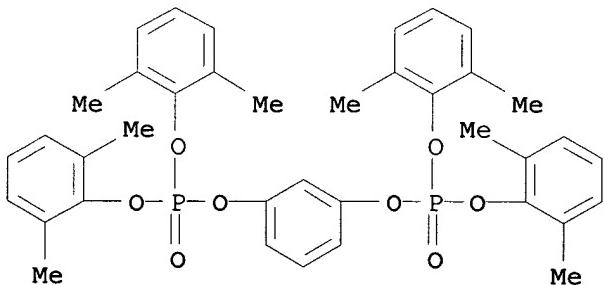
CM 2

CRN 100-21-0
CMF C8 H6 O4

CM 3

CRN 80-05-7
CMF C15 H16 O2

RN 139189-30-3 HCAPLUS
 CN Phosphoric acid, 1,3-phenylene tetrakis(2,6-dimethylphenyl) ester
 (9CI) (CA INDEX NAME)



L50 ANSWER 25 OF 35 HCAPLUS COPYRIGHT 2005 ACS on STN
 AN 2000:619527 HCAPLUS
 DN 133:208780

TI Halogen-free fire-resistant resin composition
 IN Harashina, Hatsuhiko; Nakane, Toshio; Yamada, Shinya
 PA Polyplastics Co., Ltd., Japan
 SO Jpn. Kokai Tokkyo Koho, 29 pp.
 CODEN: JKXXAF

DT Patent
 LA Japanese
 FAN.CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 2000239543	A2	20000905	JP 1999-364552	199912 22

PRAI JP 1998-367002 A 19981224

AB A fire-resistant resin compn. comprising a thermoplastic resin and a fire retardant is characterized in that the fire retardant is selected from P-contg. compds., polyarylate resins, and arom. epoxy resins. The compn. may also contain a fireproofing aid, a N-contg. fire retardant, a fluoro resin, a hindered phenolic antioxidant or a P-contg. stabilizer, and a filler. The compn. is useful in producing molding products, such as elec. or electronic parts, mech. parts, and automobile parts. Thus polybutylene terephthalate resin 100, red phosphorus 10, and a polyarylate polymer (U-Polymer U 100) 40 parts were mixed, kneaded, extruded, and injection molded to give a test piece which had V-0 in UL94 burning test.

IC ICM C08L101-16
 ICS C08J005-00; C08K003-02; C08K003-32; C08K005-521; C08L063-02;
 C08L067-02

CC 37-6 (Plastics Manufacture and Processing)
 Section cross-reference(s): 38

ST polybutylene terephthalate polyarylene blend fire resistant

IT Epoxy resins, properties
 RL: POF (Polymer in formulation); PRP (Properties); TEM (Technical or engineered material use); USES (Uses)
 (Epikote 1004K; halogen-free fire -resistant resin compn.)

IT Phenoxy resins
 RL: POF (Polymer in formulation); PRP (Properties); TEM (Technical or engineered material use); USES (Uses)
 (Pheno Toho YP 50; halogen-free fire -resistant resin compn.)

IT Polyester rubber
 Synthetic rubber, properties
 RL: POF (Polymer in formulation); PRP (Properties); TEM (Technical or engineered material use); USES (Uses)
 (butanediol-polytetramethylene glycol-terephthalic acid, block, block; halogen-free fire-resistant resin compn.)

IT Polyester rubber
 RL: POF (Polymer in formulation); PRP (Properties); TEM (Technical or engineered material use); USES (Uses)
 (butanediol-polytetramethylene glycol-terephthalic acid, block;

halogen-free fire-resistant resin
compn.)

IT Phenolic resins, properties
 RL: POF (Polymer in formulation); PRP (Properties); TEM (Technical or engineered material use); USES (Uses)
 (epoxy, novolak; halogen-free fire-resistant resin compn.)

IT Fire-resistant materials
 Fireproofing agents
 (halogen-free fire-resistant resin compn.)

IT Fluoropolymers, uses
 Glass fibers, uses
 Phenolic resins, uses
 Polyamides, uses
 RL: MOA (Modifier or additive use); USES (Uses)
 (halogen-free fire-resistant resin compn.)

IT Molded plastics, properties
 Polyamides, properties
 Polycarbonates, properties
 Polyesters, properties
 Polyoxyphenylenes
 RL: POF (Polymer in formulation); PRP (Properties); TEM (Technical or engineered material use); USES (Uses)
 (halogen-free fire-resistant resin compn.)

IT Polymer blends
 RL: PRP (Properties); TEM (Technical or engineered material use); USES (Uses)
 (halogen-free fire-resistant resin compn.)

IT Polybenzyls
 RL: MOA (Modifier or additive use); USES (Uses)
 (hydroxy-contg.; halogen-free fire-resistant resin compn.)

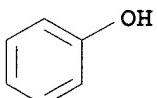
IT Phenolic resins, uses
 RL: MOA (Modifier or additive use); USES (Uses)
 (novolak; halogen-free fire-resistant resin compn.)

IT Epoxy resins, properties
 RL: POF (Polymer in formulation); PRP (Properties); TEM (Technical or engineered material use); USES (Uses)
 (phenolic, novolak; halogen-free fire-resistant resin compn.)

IT 6683-19-8, Irganox 1010 7723-14-0, Red phosphorus, uses
 9002-84-0, Polytetrafluoroethylene 9003-35-4, HPN X
 24979-70-2, Maruka Lyncur MS 1P 25718-70-1 25805-74-7, Reny 6002
 26834-02-6 26834-02-6D, reaction products with phosphoric acid
 37640-57-6, MC 610 80693-00-1 99752-88-2, PR 53195
 124784-27-6, PX 201 139189-30-3, PX 200 153550-59-5,
 Sandostab P EPQ 178965-58-7 178965-58-7D, .α.,.α.-
 Dimethoxy-p-xylene-phenol copolymer, sru, reaction products with phosphoric acid 184110-94-9, RX 53101 184378-36-7, Terraju C 60
 RL: MOA (Modifier or additive use); USES (Uses)
 (halogen-free fire-resistant resin

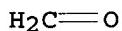
- compn.)
- IT 9003-53-6, Polystyrene 24936-68-3, Panlite L 1225, properties
 24938-67-8, Poly(2,6-dimethyl-1,4-phenylene ether)
24968-12-5, Polybutylene terephthalate 25037-45-0,
 Bisphenol A-carbonic acid copolymer 25038-59-9,
 Polyethylene terephthalate, properties 25068-38-6, Pheno TohTo YP
 50 25134-01-4, 2,6-Xylenol homopolymer 25212-77-5,
 Bisphenol A-isophthalic acid copolymer, sru 26062-94-2,
 Polybutylene terephthalate 26590-50-1, U-Polymer U 100
30580-17-7, 1,4-Butanediol-isophthalic acid-terephthalic
 acid copolymer 32131-17-2, Nylon 66, properties 32200-90-1
 39281-59-9, Bisphenol A-isophthalic acid-terephthalic acid
 copolymer, sru 55097-77-3, 1,4-Butanediol-isophthalic
 acid-terephthalic acid copolymer, sru 88795-05-5,
 Bisphenol A-diphenyl isophthalate copolymer 91891-20-2
106677-58-1, ABS resin 111214-86-9, U-Polymer AX 1500
 115252-43-2, U-Polymer U 8400 117313-45-8, Epikote 1004K
 134499-09-5, U-Polymer P 1001
 RL: POF (Polymer in formulation); PRP (Properties); TEM (Technical
 or engineered material use); USES (Uses)
 (halogen-free fire-resistant resin
 compn.) °
- IT **52237-98-6**, p-Acetoxybenzoic acid-ethylene
 glycol-terephthalic acid copolymer
 RL: POF (Polymer in formulation); PRP (Properties); TEM (Technical
 or engineered material use); USES (Uses)
 (liq. crystal; halogen-free fire
 -resistant resin compn.)
- IT **106159-00-6**, 1,4-Butanediol-polytetramethylene
 glycol-terephthalic acid block copolymer
 RL: POF (Polymer in formulation); PRP (Properties); TEM (Technical
 or engineered material use); USES (Uses)
 (rubber; halogen-free fire
 -resistant resin compn.)
- IT **9003-35-4**, HPN X 139189-30-3, PX 200
 RL: MOA (Modifier or additive use); USES (Uses)
 (halogen-free fire-resistant resin
 compn.)
- RN 9003-35-4 HCPLUS
 CN Phenol, polymer with formaldehyde (9CI) (CA INDEX NAME)

CM 1

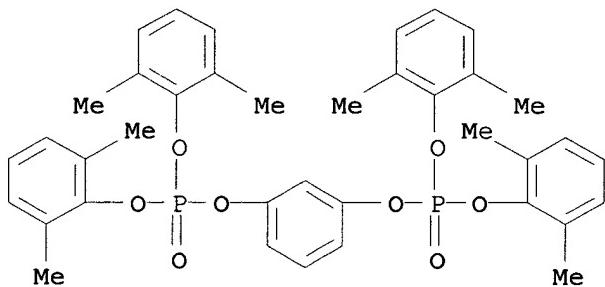
CRN 108-95-2
CMF C6 H6 O

CM 2

CRN 50-00-0
 CMF C H₂ O



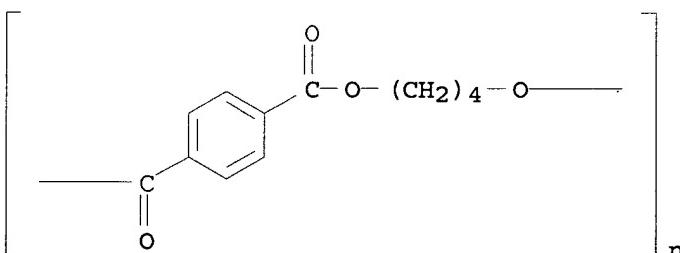
RN 139189-30-3 HCPLUS
 CN Phosphoric acid, 1,3-phenylene tetrakis(2,6-dimethylphenyl) ester
 (9CI) (CA INDEX NAME)



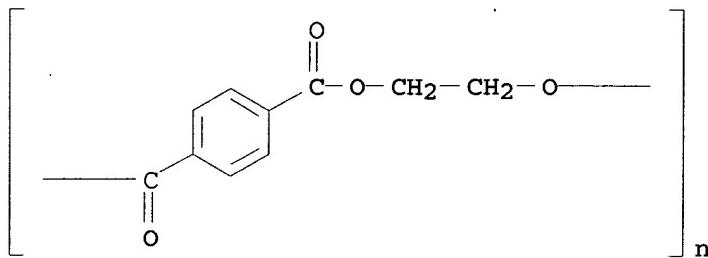
IT 24968-12-5, Polybutylene terephthalate 25038-59-9,
 Polyethylene terephthalate, properties 25212-77-5,
 Bisphenol A-isophthalic acid copolymer, sru 26062-94-2,
 Polybutylene terephthalate 26590-50-1, U-Polymer U 100
 30580-17-7, 1,4-Butanediol-isophthalic acid-terephthalic
 acid copolymer 32200-90-1 88795-05-5, Bisphenol
 A-diphenyl isophthalate copolymer 91891-20-2
 106677-58-1, ABS resin

RL: POF (Polymer in formulation); PRP (Properties); TEM (Technical
 or engineered material use); USES (Uses)
 (halogen-free fire-resistant resin
 compn.)

RN 24968-12-5 HCPLUS
 CN Poly(oxy-1,4-butanediylloxycarbonyl-1,4-phenylenecarbonyl) (9CI) (CA
 INDEX NAME)

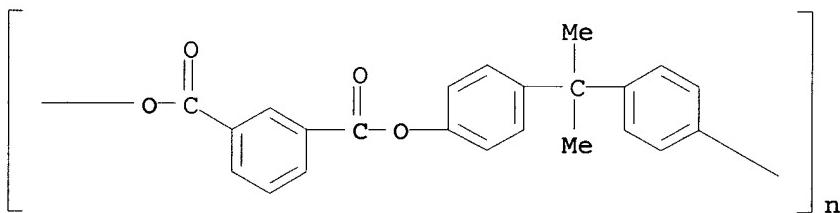


RN 25038-59-9 HCPLUS
 CN Poly(oxy-1,2-ethanediylloxycarbonyl-1,4-phenylenecarbonyl) (9CI) (CA
 INDEX NAME)



RN 25212-77-5 HCAPLUS

CN Poly[oxycarbonyl-1,3-phenylenecarbonyloxy-1,4-phenylene(1-methylethyldene)-1,4-phenylene] (9CI) (CA INDEX NAME)



RN 26062-94-2 HCAPLUS

CN 1,4-Benzeneddicarboxylic acid, polymer with 1,4-butanediol (9CI) (CA INDEX NAME)

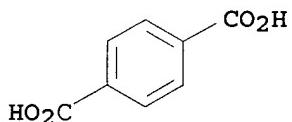
CM 1

CRN 110-63-4

CMF C₄ H₁₀ O₂HO—(CH₂)₄—OH

CM 2

CRN 100-21-0

CMF C₈ H₆ O₄

RN 26590-50-1 HCAPLUS

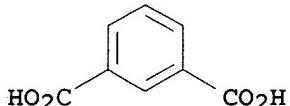
CN 1,3-Benzeneddicarboxylic acid, polymer with 1,4-benzeneddicarboxylic

acid and 4,4'-(1-methylethylidene)bis[phenol] (9CI) (CA INDEX NAME)

CM 1

CRN 121-91-5

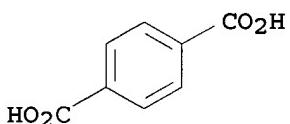
CMF C8 H6 O4



CM 2

CRN 100-21-0

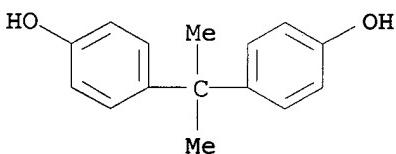
CMF C8 H6 O4



CM 3

CRN 80-05-7

CMF C15 H16 O2



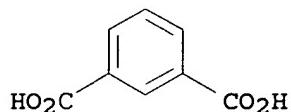
RN 30580-17-7 HCPLUS

CN 1,3-Benzenedicarboxylic acid, polymer with 1,4-benzenedicarboxylic acid and 1,4-butanediol (9CI) (CA INDEX NAME)

CM 1

CRN 121-91-5

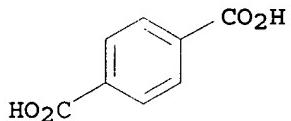
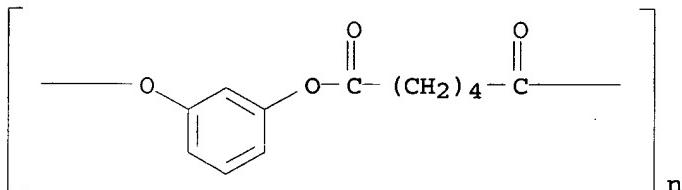
CMF C8 H6 O4



CM 2

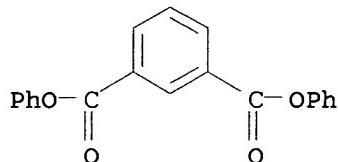
CRN 110-63-4
CMF C4 H10 O2HO- (CH₂)₄- OH

CM 3

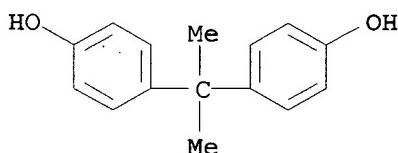
CRN 100-21-0
CMF C8 H6 O4RN 32200-90-1 HCAPLUS
CN Poly [oxy-1,3-phenyleneoxy(1,6-dioxo-1,6-hexanediyil)] (9CI) (CA INDEX NAME)RN 88795-05-5 HCAPLUS
CN 1,3-Benzenediacrylic acid, diphenyl ester, polymer with 4,4'-(1-methylethylidene)bis[phenol] (9CI) (CA INDEX NAME)

CM 1

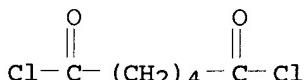
CRN 744-45-6
CMF C20 H14 O4



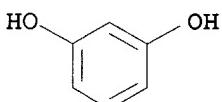
CM 2

CRN 80-05-7
CMF C15 H16 O2RN 91891-20-2 HCPLUS
CN Hexanedioyl dichloride, polymer with 1,3-benzenediol (9CI) (CA INDEX NAME)

CM 1

CRN 111-50-2
CMF C6 H8 Cl2 O2

CM 2

CRN 108-46-3
CMF C6 H6 O2RN 106677-58-1 HCPLUS
CN 2-Propenenitrile, polymer with 1,3-butadiene and ethenylbenzene, graft (9CI) (CA INDEX NAME)

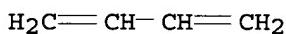
CM 1

CRN 107-13-1
 CMF C3 H3 N



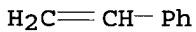
CM 2

CRN 106-99-0
 CMF C4 H6



CM 3

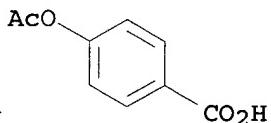
CRN 100-42-5
 CMF C8 H8



IT 52237-98-6, p-Acetoxybenzoic acid-ethylene
 glycol-terephthalic acid copolymer
 RL: POF (Polymer in formulation); PRP (Properties); TEM (Technical
 or engineered material use); USES (Uses)
 (liq. crystal; **halogen-free fire**
 -resistant resin compn.)
 RN 52237-98-6 HCPLUS
 CN 1,4-Benzenedicarboxylic acid, polymer with 4-(acetoxy)benzoic acid
 and 1,2-ethanediol (9CI) (CA INDEX NAME)

CM 1

CRN 2345-34-8
 CMF C9 H8 O4



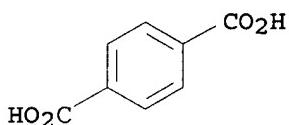
CM 2

CRN 107-21-1
 CMF C2 H6 O2

HO-CH2-CH2-OH

CM 3

CRN 100-21-0
CMF C8 H6 O4



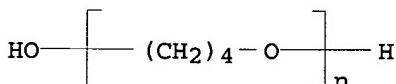
IT 106159-00-6, 1,4-Butanediol-polytetramethylene glycol-terephthalic acid block copolymer
RL: POF (Polymer in formulation); PRP (Properties); TEM (Technical or engineered material use); USES (Uses)
(rubber; halogen-free fire
-resistant resin compn.)

RN 106159-00-6 HCPLUS

CN 1,4-Benzenediacrylic acid, polymer with 1,4-butanediol and α-hydro-ω-hydroxypoly(oxy-1,4-butanediyl), block (9CI)
(CA INDEX NAME)

CM 1

CRN 25190-06-1
CMF (C₄ H₈ O)_n H₂ O
CCI PMS



CM 2

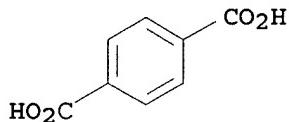
CRN 110-63-4
CMF C₄ H₁₀ O₂

HO-(CH2)4-OH

CM 3

CRN 100-21-0

CMF C8 H6 O4



L50 ANSWER 26 OF 35 HCPLUS COPYRIGHT 2005 ACS on STN
 AN 2000:465061 HCPLUS
 DN 133:90431
 TI Thermoplastic resin compositions and their injection moldings with excellent heat and **fire** resistance, flowability, and antistatic property
 IN Fukumoto, Tadao; Tamura, Shinichi; Yamauchi, Koji
 PA Toray Industries, Inc., Japan
 SO Jpn. Kokai Tokkyo Koho, 14 pp.
 CODEN: JKXXAF
 DT Patent
 LA Japanese
 FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 2000191877	A2	20000711	JP 1998-370111	199812 25

PRAI JP 1998-370111 19981225
 AB The compns. comprise (A) polymer blends comprising 70-99% rubber-reinforced styrene polymers and 1-30% polymers having vol. resistivity $\leq 10^{12} \Omega\text{-cm}$ 100, (B) silicone compds. 0.01-5, and (C) $(Ar1O)_k(Ar2O)_mP(O)[[OXOP(O)OAr3]_nOAr4]^{3-k-m}$ [X = (substituted) p- or m-C₆H₄, p-C₆H₄YC₆H₄-p; Ar1-Ar4 = (halogen-free substituted) Ph; Y = direct bond, O, S, SO₂, CMe₂, CH₂, CHPh; n ≥ 0; 0 ≤ k, m ≤ 2; 0 ≤ k + m ≤ 2] 1-20 parts. A test piece comprising butadiene-styrene-acrylonitrile graft copolymer 20, styrene-acrylonitrile copolymer 65, caprolactam-polyethylene glycol-terephthalic acid copolymer 15, PX 20 10, and DY 33-723 (silicone rubber powder) 0.5 part showed Izod impact strength 200 J/m, MFR 9 g/10 min, deflection temp. under load 85°, and surface resistivity $1 \times 10^{10} \Omega$ initially and after 100 days (23°, 50% RH).
 IC ICM C08L051-04
 ICS C08J005-00; C08K005-521; C08L025-04; C08L055-02; C08L051-04;
 C08L101-12; C08L083-04
 CC 38-3 (Plastics Fabrication and Uses)
 ST thermoplastic molding polystyrene organophosphorus silicone flowability; molding rubber reinforced polystyrene **fire** resistance; polyether ester amide molding antistatic property
 IT Silsesquioxanes
 RL: MOA (Modifier or additive use); PRP (Properties); USES (Uses)
 (DC 4-7105; thermoplastic resin compns. for injection moldings)

- with excellent heat and **fire** resistance, flowability,
and antistatic property)
- IT Silicone rubber, uses
 RL: MOA (Modifier or additive use); PRP (Properties); USES (Uses)
 (DY 33-723; thermoplastic resin compns. for injection moldings
 with excellent heat and **fire** resistance, flowability,
 and antistatic property)
- IT Polyoxyalkylenes, uses
 Polyoxyalkylenes, uses
 Polyoxyalkylenes, uses
 RL: IMF (Industrial manufacture); POF (Polymer in formulation); PRP
 (Properties); TEM (Technical or engineered material use); PREP
 (Preparation); USES (Uses)
 (polyamide-polyester-, block; thermoplastic resin compns. for
 injection moldings with excellent heat and **fire**
 resistance, flowability, and antistatic property)
- IT Polyesters, uses
 Polyesters, uses
 Polyesters, uses
 RL: IMF (Industrial manufacture); POF (Polymer in formulation); PRP
 (Properties); TEM (Technical or engineered material use); PREP
 (Preparation); USES (Uses)
 (polyamide-polyoxyalkylene-, block; thermoplastic resin compns.
 for injection moldings with excellent heat and **fire**
 resistance, flowability, and antistatic property)
- IT Polyamides, uses
 Polyamides, uses
 Polyamides, uses
 RL: IMF (Industrial manufacture); POF (Polymer in formulation); PRP
 (Properties); TEM (Technical or engineered material use); PREP
 (Preparation); USES (Uses)
 (polyester-polyoxyalkylene-, block; thermoplastic resin compns.
 for injection moldings with excellent heat and **fire**
 resistance, flowability, and antistatic property)
- IT Antistatic agents
Fire-resistant materials
 (thermoplastic resin compns. for injection moldings with
 excellent heat and **fire** resistance, flowability, and
 antistatic property)
- IT Molded plastics, uses
 Polymer blends
 RL: PRP (Properties); TEM (Technical or engineered material use);
 USES (Uses)
 (thermoplastic resin compns. for injection moldings with
 excellent heat and **fire** resistance, flowability, and
 antistatic property)
- IT 9003-54-7P, Acrylonitrile-styrene copolymer
 106677-58-1P, Acrylonitrile-butadiene-styrene graft
 copolymer 113264-08-7P
 RL: IMF (Industrial manufacture); POF (Polymer in formulation); PRP
 (Properties); TEM (Technical or engineered material use); PREP
 (Preparation); USES (Uses)
 (thermoplastic resin compns. for injection moldings with
 excellent heat and **fire** resistance, flowability, and
 antistatic property)
- IT 57583-54-7, CR 733S 139189-30-3, PX 200

RL: MOA (Modifier or additive use); PRP (Properties); USES (Uses)
 (thermoplastic resin compns. for injection moldings with
 excellent heat and fire resistance, flowability, and
 antistatic property)

IT 9003-54-7P, Acrylonitrile-styrene copolymer
 106677-58-1P, Acrylonitrile-butadiene-styrene graft
 copolymer 113264-08-7P

RL: IMF (Industrial manufacture); POF (Polymer in formulation); PRP
 (Properties); TEM (Technical or engineered material use); PREP
 (Preparation); USES (Uses)
 (thermoplastic resin compns. for injection moldings with
 excellent heat and fire resistance, flowability, and
 antistatic property)

RN 9003-54-7 HCPLUS

CN 2-Propenenitrile, polymer with ethenylbenzene (9CI) (CA INDEX NAME)

CM 1

CRN 107-13-1

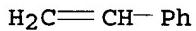
CMF C3 H3 N



CM 2

CRN 100-42-5

CMF C8 H8



RN 106677-58-1 HCPLUS

CN 2-Propenenitrile, polymer with 1,3-butadiene and ethenylbenzene,
 graft (9CI) (CA INDEX NAME)

CM 1

CRN 107-13-1

CMF C3 H3 N



CM 2

CRN 106-99-0

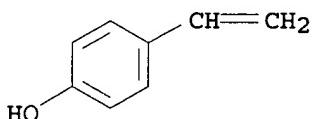
CMF C4 H6

- 1,4-Butanediol-isophthalic acid-terephthalic acid copolymer
 32131-17-2, Polypla 66, uses 55097-77-3, 1,4-Butanediol-
 isophthalic acid-terephthalic acid copolymer, sru
 RL: POF (Polymer in formulation); PRP (Properties); TEM (Technical
 or engineered material use); USES (Uses)
 (flame retardant thermoplastic resin compns. contg. P
 compds. and OH-contg. polymers for elec., electronic, and
 automotive parts)
- IT 107039-67-8, p-Acetoxybenzoic acid-ethylene
 glycol-terephthalic acid block copolymer
 RL: POF (Polymer in formulation); PRP (Properties); TEM (Technical
 or engineered material use); USES (Uses)
 (liq.-cryst.; flame retardant thermoplastic resin
 compns. contg. P compds. and OH-contg. polymers for elec.,
 electronic, and automotive parts)
- IT 7723-14-0, Novaexcel 140, uses
 RL: MOA (Modifier or additive use); USES (Uses)
 (red, fireproofing agent; flame retardant
 thermoplastic resin compns. contg. P compds. and OH-contg.
 polymers for elec., electronic, and automotive parts)
- IT 106159-00-6, 1,4-Butanediol-polytetramethylene
 glycol-terephthalic acid block copolymer
 RL: POF (Polymer in formulation); PRP (Properties); TEM (Technical
 or engineered material use); USES (Uses)
 (rubber; flame retardant thermoplastic resin compns.
 contg. P compds. and OH-contg. polymers for elec., electronic,
 and automotive parts)
- IT 110123-09-6, Maruka Lyncur CHM 139189-30-3, PX 200
 RL: MOA (Modifier or additive use); USES (Uses)
 (fireproofing agent; flame retardant
 thermoplastic resin compns. contg. P compds. and OH-contg.
 polymers for elec., electronic, and automotive parts)
- RN 110123-09-6 HCAPLUS
- CN 2-Propenoic acid, 2-methyl-, 2-hydroxyethyl ester, polymer with
 4-ethenylphenol (9CI) (CA INDEX NAME)

CM 1

CRN 2628-17-3

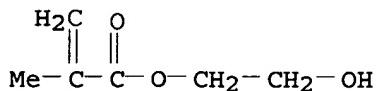
CMF C8 H8 O



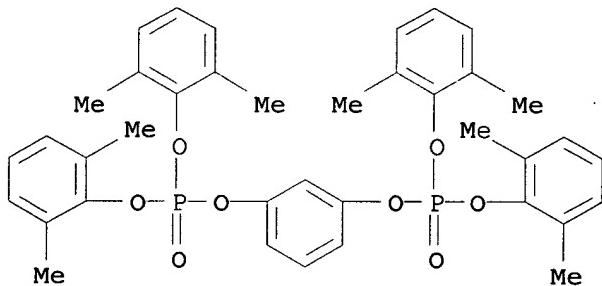
CM 2

CRN 868-77-9

CMF C6 H10 O3



RN 139189-30-3 HCAPLUS
 CN Phosphoric acid, 1,3-phenylene tetrakis(2,6-dimethylphenyl) ester
 (9CI) (CA INDEX NAME)



IT 9003-56-9, ABS 24968-12-5, Duranex
 25038-59-9, Bellpet EFG 10, uses 26062-94-2,
 1,4-Butanediol-terephthalic acid copolymer 30580-17-7,
 1,4-Butanediol-isophthalic acid-terephthalic acid copolymer
 RL: POF (Polymer in formulation); PRP (Properties); TEM (Technical
 or engineered material use); USES (Uses)
 (flame retardant thermoplastic resin compns. contg. P
 compds. and OH-contg. polymers for elec., electronic, and
 automotive parts)

RN 9003-56-9 HCAPLUS
 CN 2-Propenenitrile, polymer with 1,3-butadiene and ethenylbenzene
 (9CI) (CA INDEX NAME)

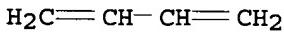
CM 1

CRN 107-13-1
 CMF C3 H3 N

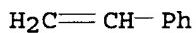


CM 2

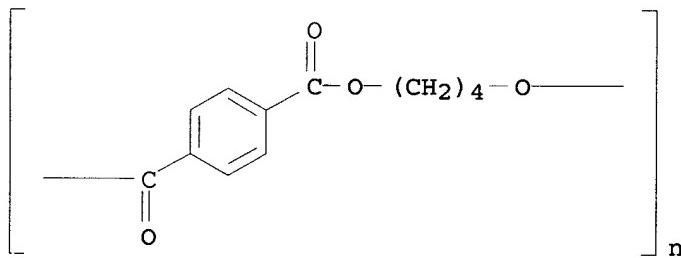
CRN 106-99-0
 CMF C4 H6



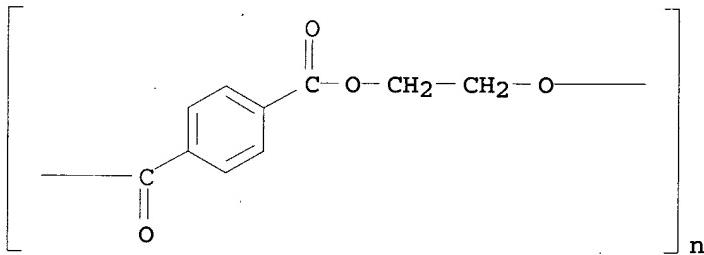
CM 3

CRN 100-42-5
CMF C8 H8

RN 24968-12-5 HCPLUS
 CN Poly(oxy-1,4-butanediylloxycarbonyl-1,4-phenylenecarbonyl) (9CI) (CA
 INDEX NAME)

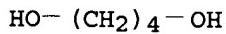


RN 25038-59-9 HCPLUS
 CN Poly(oxy-1,2-ethanediylloxycarbonyl-1,4-phenylenecarbonyl) (9CI) (CA
 INDEX NAME)

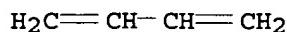


RN 26062-94-2 HCPLUS
 CN 1,4-Benzenedicarboxylic acid, polymer with 1,4-butanediol (9CI) (CA
 INDEX NAME)

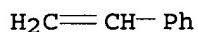
CM 1

CRN 110-63-4
CMF C4 H10 O2

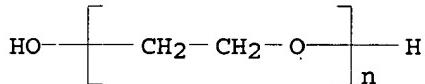
CM 2



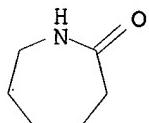
CM 3

CRN 100-42-5
CMF C8 H8RN 113264-08-7 HCPLUS
CN 1,4-Benzenedicarboxylic acid, polymer with hexahydro-2H-azepin-2-one
and α -hydro- ω -hydroxypoly(oxy-1,2-ethanediyl), block
(9CI) (CA INDEX NAME)

CM 1

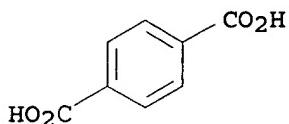
CRN 25322-68-3
CMF (C₂ H₄ O)_n H₂ O
CCI PMS

CM 2

CRN 105-60-2
CMF C₆ H₁₁ N O

CM 3

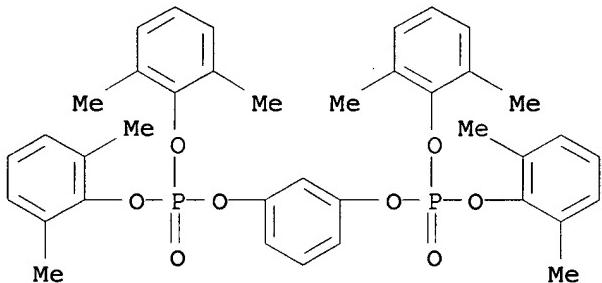
CRN 100-21-0
CMF C₈ H₆ O₄



IT 139189-30-3, PX 200

RL: MOA (Modifier or additive use); PRP (Properties); USES (Uses)
 (thermoplastic resin compns. for injection moldings with
 excellent heat and fire resistance, flowability, and
 antistatic property)

RN 139189-30-3 HCAPLUS

CN Phosphoric acid, 1,3-phenylene tetrakis(2,6-dimethylphenyl) ester
 (9CI) (CA INDEX NAME)

L50 ANSWER 27 OF 35 HCAPLUS COPYRIGHT 2005 ACS on STN

AN 2000:454395 HCAPLUS

DN 133:75073

TI Halogen-free flame retardant

thermoplastic resin compositions containing phosphorus compounds,
 their manufacture, and molded products therefrom

IN Harashina, Hatsuhiiko; Nakane, Toshio; Yamada, Shinya

PA Polyplastics Co., Ltd., Japan

SO Jpn. Kokai Tokkyo Koho, 20 pp.

CODEN: JKXXAF

DT Patent

LA Japanese

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 2000186220	A2	20000704	JP 1999-290103	199910 12

PRAI JP 1998-290947 A 19981013

AB The compns., useful for elec., electronic, and automotive parts,
 contain thermoplastic resins and fireproofing agents
 contg. P compds. and polymers with OH-contg. arom. side chains.
 Thus, a 100:6.6:11 Duranex (PBT)-Novaexcel 140 (red P)-Maruka Lyncur
 MS 1P (p-vinylphenol polymer) mixt. was molded into a test piece

showing fire resistance (UL 94) V-0 and no bleed out after 24 h at 240°.

IC ICM C08L101-16
ICS C08K003-32; C08K005-521; C08L025-18; C09K015-20; C09K021-04;
C09K021-12; C09K021-14

CC 38-3 (Plastics Fabrication and Uses)
Section cross-reference(s): 37

ST fire resistance thermoplastic resin elec part; PBT polyvinylphenol red phosphorus fluoropolymer blend; bleeding resistance polycarbonate automotive part

IT Polyester rubber
Synthetic rubber, uses
RL: POF (Polymer in formulation); PRP (Properties); TEM (Technical or engineered material use); USES (Uses)
(butanediol-polytetramethylene glycol-terephthalic acid, block, block; flame retardant thermoplastic resin compns.
contg. P compds. and OH-contg. polymers for elec., electronic, and automotive parts)

IT Polyester rubber
RL: POF (Polymer in formulation); PRP (Properties); TEM (Technical or engineered material use); USES (Uses)
(butanediol-polytetramethylene glycol-terephthalic acid, block; flame retardant thermoplastic resin compns. contg. P compds. and OH-contg. polymers for elec., electronic, and automotive parts)

IT Electric apparatus
Fire-resistant materials
Fireproofing agents
Machinery parts
(flame retardant thermoplastic resin compns. contg. P compds. and OH-contg. polymers for elec., electronic, and automotive parts)

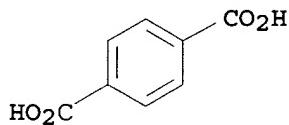
IT Fluoropolymers, uses
RL: MOA (Modifier or additive use); USES (Uses)
(flame retardant thermoplastic resin compns. contg. P compds. and OH-contg. polymers for elec., electronic, and automotive parts)

IT Glass fibers, uses
Polyamides, uses
Polyesters, uses
RL: POF (Polymer in formulation); PRP (Properties); TEM (Technical or engineered material use); USES (Uses)
(flame retardant thermoplastic resin compns. contg. P compds. and OH-contg. polymers for elec., electronic, and automotive parts)

IT Acrylic polymers, uses
Polyolefins
Polyoxyphenylenes
RL: POF (Polymer in formulation); TEM (Technical or engineered material use); USES (Uses)
(flame retardant thermoplastic resin compns. contg. P compds. and OH-contg. polymers for elec., electronic, and automotive parts)

IT Polymer blends
RL: PRP (Properties); TEM (Technical or engineered material use); USES (Uses)

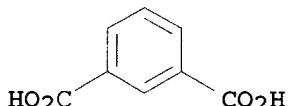
CRN 100-21-0
 CMF C8 H6 O4



RN 30580-17-7 HCPLUS
 CN 1,3-Benzenedicarboxylic acid, polymer with 1,4-benzenedicarboxylic acid and 1,4-butanediol (9CI) (CA INDEX NAME)

CM 1

CRN 121-91-5
 CMF C8 H6 O4



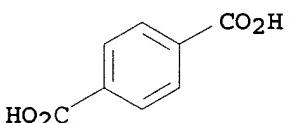
CM 2

CRN 110-63-4
 CMF C4 H10 O2

HO—(CH₂)₄—OH

CM 3

CRN 100-21-0
 CMF C8 H6 O4



IT 107039-67-8, p-Acetoxybenzoic acid-ethylene glycol-terephthalic acid block copolymer
 RL: POF (Polymer in formulation); PRP (Properties); TEM (Technical or engineered material use); USES (Uses)

(liq.-cryst.; flame retardant thermoplastic resin
compns. contg. P compds. and OH-contg. polymers for elec.,
electronic, and automotive parts)

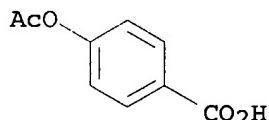
RN 107039-67-8 HCPLUS

CN 1,4-Benzenedicarboxylic acid, polymer with 4-(acetoxy)benzoic acid
and 1,2-ethanediol, block (9CI) (CA INDEX NAME)

CM 1

CRN 2345-34-8

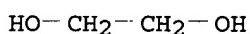
CMF C9 H8 O4



CM 2

CRN 107-21-1

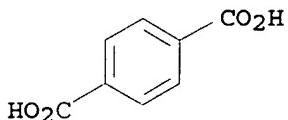
CMF C2 H6 O2



CM 3

CRN 100-21-0

CMF C8 H6 O4



IT 106159-00-6, 1,4-Butanediol-polytetramethylene
glycol-terephthalic acid block copolymer

RL: POF (Polymer in formulation); PRP (Properties); TEM (Technical
or engineered material use); USES (Uses)

(rubber; flame retardant thermoplastic resin compns.

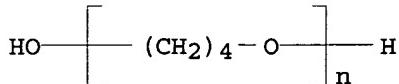
contg. P compds. and OH-contg. polymers for elec., electronic,
and automotive parts)

RN 106159-00-6 HCPLUS

CN 1,4-Benzenedicarboxylic acid, polymer with 1,4-butanediol and
 α -hydro- ω -hydroxypoly(oxy-1,4-butanediyl), block (9CI)
(CA INDEX NAME)

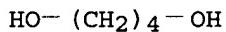
CM 1

CRN 25190-06-1
 CMF (C₄ H₈ O)_n H₂ O
 CCI PMS



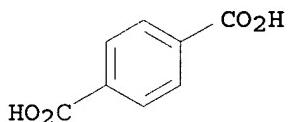
CM 2

CRN 110-63-4
 CMF C₄ H₁₀ O₂



CM 3

CRN 100-21-0
 CMF C₈ H₆ O₄



L50 ANSWER 28 OF 35 HCPLUS COPYRIGHT 2005 ACS on STN
 AN 2000:389039 HCPLUS
 DN 133:18548
 TI Halogen-free fire-, heat-, and
 moisture-resistant thermoplastic resin compositions containing
 phosphonate salts, and moldings and cable jackets thereof
 IN Yamauchi, Koji; Matsumoto, Hideki; Kamata, Akinori
 PA Toray Industries, Inc., Japan
 SO Jpn. Kokai Tokkyo Koho, 14 pp.
 CODEN: JKXXAF

DT Patent
 LA Japanese
 FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 2000160036	A2	20000613	JP 1999-264536	199909 17

PRAI JP 1998-269900 A 19980924

OS MARPAT 133:18548

AB The compns., also useful for elec. connectors, switches, etc., contain 100 parts thermoplastic resins and 1-100 parts ammonium or substituted 1,3,5-triazine salts of HOCR1(PO3H2)2 or N(CR22PO3H2)3 (R1, R2 = H, alkyl, aralkyl, cycloalkyl). The compns. also show good thermal stability during processing. An injection molding comprising 100 parts 1100S [poly(butylene terephthalate)] and 20 parts ammonium hydroxyethanediphosphonate showed UL94 flammability rating V-2 and good fire and moisture resistance.

IC ICM C08L101-02

ICS C08K005-5317; H01B003-30; H01B003-42; H01B003-44

CC 38-3 (Plastics Fabrication and Uses)

Section cross-reference(s): 37, 76

ST thermoplastic resin ammonium triazine phosphonate
fireproofer; polybutylene terephthalate ammonium
hydroxyethanediphosphonate fireproofer; cable jacket elec
part phosphonate fireproofer; halogen
free phosphonate fireproofer thermoplastic resin;
molding thermoplastic resin heat moisture resistance; thermal
stability thermoplastic resin phosphonate fireproofer

IT Tools

(bobbins, coiled; heat- and moisture-resistant thermoplastic
resin compns. contg. phosphonate salts as fireproofing
agents for cable jackets and elec. parts)

IT Electric contacts

(connectors; heat- and moisture-resistant thermoplastic resin
compns. contg. phosphonate salts as fireproofing agents
for cable jackets and elec. parts)

IT Electric cables

Electric insulators

Electric switches

Fire-resistant materials

Fireproofing agents

Relays

Water-resistant materials

(heat- and moisture-resistant thermoplastic resin compns. contg.
phosphonate salts as fireproofing agents for cable
jackets and elec. parts)

IT Phenolic resins, uses

Phenoxy resins

Polyamides, uses

Polycarbonates, uses

Polyesters, uses

Polythiophenylenes

RL: DEV (Device component use); POF (Polymer in formulation); PRP
(Properties); TEM (Technical or engineered material use); USES
(Uses)

(heat- and moisture-resistant thermoplastic resin compns. contg.
phosphonate salts as fireproofing agents for cable
jackets and elec. parts)

IT Molded plastics, uses

RL: DEV (Device component use); PRP (Properties); TEM (Technical or
engineered material use); USES (Uses)

(heat- and moisture-resistant thermoplastic resin compns. contg.
phosphonate salts as fireproofing agents for cable

jackets and elec. parts)

IT Automobiles
 (parts; heat- and moisture-resistant thermoplastic resin compns.
 contg. phosphonate salts as fireproofing agents for
 cable jackets and elec. parts)

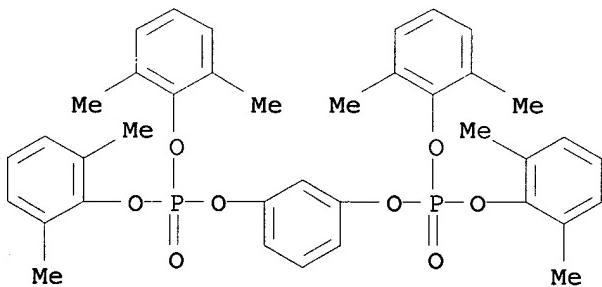
IT Plastics, uses
 RL: DEV (Device component use); POF (Polymer in formulation); PRP
 (Properties); TEM (Technical or engineered material use); USES
 (Uses)
 (thermoplastics; heat- and moisture-resistant thermoplastic resin
 compns. contg. phosphonate salts as fireproofing agents
 for cable jackets and elec. parts)

IT 7101-46-4P 139189-30-3P, PX 200 259659-19-3P
 259826-33-0P 808740-84-3P, MC 440
 RL: IMF (Industrial manufacture); MOA (Modifier or additive use);
 PRP (Properties); PREP (Preparation); USES (Uses)
 (fireproofing agent; heat- and moisture-resistant
 thermoplastic resin compns. contg. phosphonate salts as
 fireproofing agents for cable jackets and elec. parts)

IT 9003-56-9, Toyolac T 100 24936-68-3, Iupilon S3000, uses
 24968-12-5, 1100S 25037-45-0 26061-90-5,
 Bondfast E 26062-94-2
 RL: DEV (Device component use); POF (Polymer in formulation); PRP
 (Properties); TEM (Technical or engineered material use); USES
 (Uses)
 (heat- and moisture-resistant thermoplastic resin compns. contg.
 phosphonate salts as fireproofing agents for cable
 jackets and elec. parts)

IT 139189-30-3P, PX 200
 RL: IMF (Industrial manufacture); MOA (Modifier or additive use);
 PRP (Properties); PREP (Preparation); USES (Uses)
 (fireproofing agent; heat- and moisture-resistant
 thermoplastic resin compns. contg. phosphonate salts as
 fireproofing agents for cable jackets and elec. parts)

RN 139189-30-3 HCPLUS
 CN Phosphoric acid, 1,3-phenylene tetrakis(2,6-dimethylphenyl) ester
 (9CI) (CA INDEX NAME)



IT 9003-56-9, Toyolac T 100 24968-12-5, 1100S
 26061-90-5, Bondfast E 26062-94-2
 RL: DEV (Device component use); POF (Polymer in formulation); PRP
 (Properties); TEM (Technical or engineered material use); USES
 (Uses)

(heat- and moisture-resistant thermoplastic resin compns. contg.
phosphonate salts as fireproofing agents for cable
jackets and elec. parts)

RN 9003-56-9 HCAPLUS

CN 2-Propenenitrile, polymer with 1,3-butadiene and ethenylbenzene
(9CI) (CA INDEX NAME)

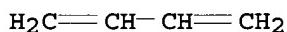
CM 1

CRN 107-13-1
CMF C3 H3 N



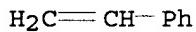
CM 2

CRN 106-99-0
CMF C4 H6



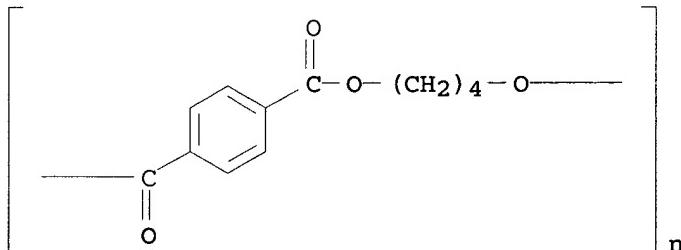
CM 3

CRN 100-42-5
CMF C8 H8



RN 24968-12-5 HCAPLUS

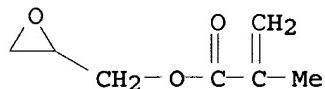
CN Poly(oxy-1,4-butanediylloxycarbonyl-1,4-phenylene carbonyl) (9CI) (CA INDEX NAME)



RN 26061-90-5 HCAPLUS

CN 2-Propenoic acid, 2-methyl-, oxiranylmethyl ester, polymer with ethene (9CI) (CA INDEX NAME)

CM 1

CRN 106-91-2
CMF C7 H10 O3

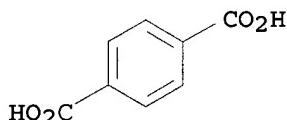
CM 2

CRN 74-85-1
CMF C2 H4 $\text{H}_2\text{C}=\text{CH}_2$ RN 26062-94-2 HCPLUS
CN 1,4-Benzenedicarboxylic acid, polymer with 1,4-butanediol (9CI) (CA INDEX NAME)

CM 1

CRN 110-63-4
CMF C4 H10 O2 $\text{HO}-\text{(CH}_2\text{)}_4-\text{OH}$

CM 2

CRN 100-21-0
CMF C8 H6 O4

L50 ANSWER 29 OF 35 HCPLUS COPYRIGHT 2005 ACS on STN
 AN 2000:317044 HCPLUS
 DN 132:322838
 TI Flame retardant poly(butylene terephthalate) compositions containing phosphate esters and molded products therefrom
 IN Yamauchi, Koji; Matsumoto, Hideki; Kanomata, Akinori
 PA Toray Industries, Inc., Japan

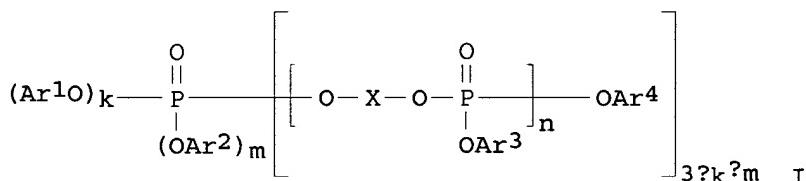
SO Jpn. Kokai Tokkyo Koho, 13 pp.
CODEN: JKXXAF

DT Patent

LA Japanese

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 2000136297	A2	20000516	JP 1999-227574	199908 11
PRAI	JP 1998-237163	A	19980824		
GI					



AB The compns., useful for machine, elec., electronic, and automotive parts, contain PBT 100, polycarbonates 0.1-100, red P with elec. cond. 0.1-1000 μ S (measured by mixing 5 g red P with 100 mL H₂O, extg. at 121° for 100 h, and dilg. filtrated solns. with 250 mL H₂O) 0.01-30, and I [X = R₁-4-substituted p-phenylene, R₅-8-substituted m-phenylene, p-C₆H₄Y-p-C₆H₄; R₁-8 = H, C₁-5 alkyl; Ar₁-4 = (halogen-free substituted) arom. group; Y = direct bond, O, S, SO₂, CMe₂, CH₂, CHPh; n ≥ 0; k, m = 0-2; k + m = 0-2]. Thus, a test piece contg. 1100S (PBT) 95, Iupilon S 3000 (polycarbonate) 15, a 1:1 1100S-Novaexcel 140 (red P) mixt. 10, PX 200 (phosphate ester) 5, and glass fiber 55 parts showed UL-94 rating V-0, good impact and tracking resistance, and good recyclability.

IC ICM C08L067-02

ICS C08J003-20; C08K003-02; C08K005-3492; C08K005-523; C08K007-14; C08K009-04; H01F041-12; H01H009-02; H01R013-46; C08L067-02; C08L069-00; C08L027-12; C08L023-00

CC 38-3 (Plastics Fabrication and Uses)

Section cross-reference(s): 37

ST fire resistance PBT polycarbonate phosphate ester; red phosphorus PBT automotive part recyclability; impact resistance PBT polycarbonate connector

IT Silsesquioxanes

RL: MOA (Modifier or additive use); USES (Uses)
(DC 4-7105; flame retardant PBT compns. contg. red P and phosphate esters for machine and automotive parts with good recyclability)

IT Impact-resistant materials

(fire-resistant; flame retardant PBT compns. contg. red P and phosphate esters for machine and automotive parts with good recyclability)

IT Electric apparatus
Fireproofing agents
 Machinery parts
 Recycling of plastics and rubbers
 (**flame retardant PBT compns. contg. red P and phosphate esters for machine and automotive parts with good recyclability**)

IT Polycarbonates, uses
 RL: DEV (Device component use); POF (Polymer in formulation); PRP (Properties); TEM (Technical or engineered material use); USES (Uses)
 (**flame retardant PBT compns. contg. red P and phosphate esters for machine and automotive parts with good recyclability**)

IT Polymer blends
 RL: DEV (Device component use); PRP (Properties); TEM (Technical or engineered material use); USES (Uses)
 (**flame retardant PBT compns. contg. red P and phosphate esters for machine and automotive parts with good recyclability**)

IT Fluoropolymers, uses
 Polyolefins
 RL: MOA (Modifier or additive use); USES (Uses)
 (**flame retardant PBT compns. contg. red P and phosphate esters for machine and automotive parts with good recyclability**)

IT Fire-resistant materials
 (impact-resistant; **flame retardant PBT compns. contg. red P and phosphate esters for machine and automotive parts with good recyclability**)

IT Automobiles
 (parts; **flame retardant PBT compns. contg. red P and phosphate esters for machine and automotive parts with good recyclability**)

IT 24936-68-3, Iupilon S 3000, uses **24968-12-5**, 1100S
 25037-45-0, Bisphenol A-carbonic acid copolymer **26062-94-2**, 1,4-Butanediol-terephthalic acid copolymer
 RL: DEV (Device component use); POF (Polymer in formulation); PRP (Properties); TEM (Technical or engineered material use); USES (Uses)
 (**flame retardant PBT compns. contg. red P and phosphate esters for machine and automotive parts with good recyclability**)

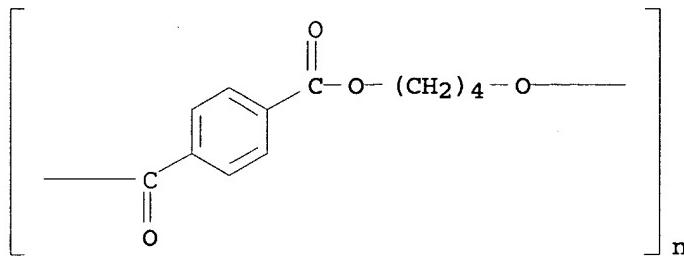
IT 9002-84-0, Teflon 6J **26061-90-5**, Bondfast E
139189-30-3, PX 200 808740-84-3, MC 440
 RL: MOA (Modifier or additive use); USES (Uses)
 (**flame retardant PBT compns. contg. red P and phosphate esters for machine and automotive parts with good recyclability**)

IT 7723-14-0, Novaexcel 140, uses
 RL: MOA (Modifier or additive use); USES (Uses)
 (red; **flame retardant PBT compns. contg. red P and phosphate esters for machine and automotive parts with good recyclability**)

IT **24968-12-5**, 1100S **26062-94-2**, 1,4-Butanediol-terephthalic acid copolymer
 RL: DEV (Device component use); POF (Polymer in formulation); PRP (Properties); TEM (Technical or engineered material use); USES (Uses)
 (**flame retardant PBT compns. contg. red P and phosphate esters for machine and automotive parts with good recyclability**)

RN 24968-12-5 HCPLUS

CN Poly(oxy-1,4-butanediylloxycarbonyl-1,4-phenylene carbonyl) (9CI) (CA INDEX NAME)



RN 26062-94-2 HCAPLUS

CN 1,4-Benzenedicarboxylic acid, polymer with 1,4-butanediol (9CI) (CA INDEX NAME)

CM 1

CRN 110-63-4

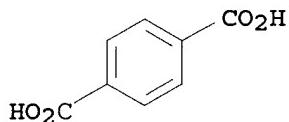
CMF C4 H10 O2

HO-(CH₂)₄-OH

CM 2

CRN 100-21-0

CMF C8 H6 O4



IT 26061-90-5, Bondfast E 139189-30-3, PX 200

RL: MOA (Modifier or additive use); USES (Uses)

(flame retardant PBT compns. contg. red P and phosphate esters for machine and automotive parts with good recyclability)

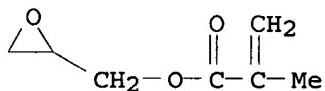
RN 26061-90-5 HCAPLUS

CN 2-Propenoic acid, 2-methyl-, oxiranylmethyl ester, polymer with ethene (9CI) (CA INDEX NAME)

CM 1

CRN 106-91-2

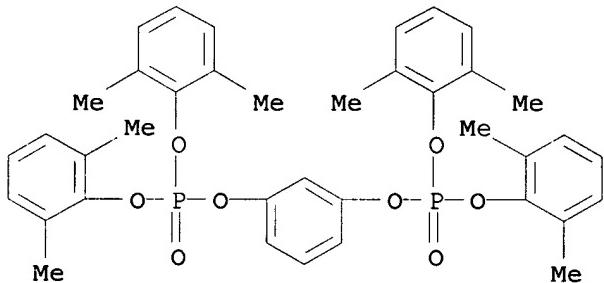
CMF C7 H10 O3



CM 2

CRN 74-85-1
CMF C2 H4 $\text{H}_2\text{C}=\text{CH}_2$

RN 139189-30-3 HCPLUS
 CN Phosphoric acid, 1,3-phenylene tetrakis(2,6-dimethylphenyl) ester
 (9CI) (CA INDEX NAME)



L50 ANSWER 30 OF 35 HCPLUS COPYRIGHT 2005 ACS on STN

AN 1999:751647 HCPLUS

DN 131:337896

TI Fire-resistant polyester compositions

IN Fujita, Katsutoyo; Iba, Satoaki

PA Kanegafuchi Chemical Industry Co., Ltd., Japan

SO Jpn. Kokai Tokkyo Koho, 12 pp.

CODEN: JKXXAF

DT Patent

LA Japanese

FAN.CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
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PI JP 11323105	A2	19991126	JP 1998-136830	199805 19

PRAI JP 1998-136830 19980519

OS MARPAT 131:337896

AB The compns. contain (A) thermoplastic polyesters 30-70,
 (B) org. P-contg. fireproofing agents 5-20, (C) coated, stabilized
 red phosphorus-contg. fireproofing agents 0-5, (D) melamine-cyanuric
 acid addn. compds. 4-20, (E) copolymers with MI at 190° and

2-kg load (JIS K 6370) 2-500 g/10 min and composed of ethylene 30-90, C1-10 alkyl (meth)acrylates 10-50, C0 0-40, and other copolymerizable vinyl monomers 0-10% 0.5-15, and (F) glass fibers 5-50 parts, wherein a total of A to F is 100 parts. The compns. have good mech. strength, hardness of weld parts, flame retardance, moisture and heat resistance, fluidity, tracking resistance, and extrusion moldability. Thus, poly(ethylene terephthalate) with logarithmic viscosity (1/1 PhOH/C₂H₂Cl₄, 25°) 0.65 dL/g 60.0, bisphenol A bis(dicresyl) phosphate (CR 747) 6.0, a **phenolic resin**-coated red P (Novaexcel 140) 3.0, melamine cyanurate (MC 440) 10.0, 65:35 ethylene-Et **acrylate copolymer** (Evaflex EEA-A 709) 10.0, Epikote 828 0.5, and ADK Stab AO 60 0.5% were dry-blended, kneaded at 270-280° with 10.0% a glass fiber (T 195H/P) to give a compn. It was injection-molded to give test pieces with UL-94 flame retardance of 1.6-mm thick bar V-0, resp., tensile strength 91 MPa, weld hardness 70 MPa and its retention 76.9% after 24 h at 121° and 100% RH, heat distortion temp. 201°, fluidity (0.01 mL/s) 35, and tracking resistance 325 V.

- IC ICM C08L067-02
 ICS C08K005-3477; C08K005-49; C08K007-14; C08K009-00; C08L067-02;
 C08L073-00; C08L033-08; C08L065-00
- CC 37-6 (Plastics Manufacture and Processing)
- ST thermoplastic **polyester** phosphorus fireproofing agent; melamine cyanurate thermoplastic **polyester** flame retardant compn; ethylene alkyl **acrylate copolymer** **polyester** compn; glass fiber reinforced thermoplastic **polyester**; polyethylene terephthalate phosphorus fireproofing agent
- IT Glass fibers, uses
 RL: MOA (Modifier or additive use); USES (Uses)
 (T 195H/P; flame-retardant, glass fiber-reinforced thermoplastic **polyester** compns. free of Br, Cl, As)
- IT Fireproofing agents
 (coated stabilized red P-org. P compd. mixts.; flame-retardant, glass fiber-reinforced thermoplastic **polyester** compns. free of Br, Cl, As)
- IT **Polyesters**, properties
 RL: POF (Polymer in formulation); PRP (Properties); USES (Uses)
 (flame-retardant, glass fiber-reinforced thermoplastic **polyester** compns. free of Br, Cl, As)
- IT **Polyesters**, properties
 RL: POF (Polymer in formulation); PRP (Properties); TEM (Technical or engineered material use); USES (Uses)
 (flame-retardant, glass fiber-reinforced thermoplastic **polyester** compns. free of Br, Cl, As free of Br, Cl, As)
- IT Reinforced plastics
 RL: PRP (Properties); TEM (Technical or engineered material use); USES (Uses)
 (glass fiber-reinforced; flame-retardant, glass fiber-reinforced thermoplastic **polyester** compns. free of Br, Cl, As)
- IT 9010-86-0, Evaflex EEA-A 704
 RL: POF (Polymer in formulation); PRP (Properties); USES (Uses)
 (Evaflex EEA-A 709; flame-retardant, glass fiber-reinforced thermoplastic **polyester** compns. free of Br, Cl, As)
- IT 101-02-0, TPP 93981-32-9, CR 747 124784-27-6, PX 201

139189-30-3, PX 200 808740-84-3, MC 440
 RL: MOA (Modifier or additive use); USES (Uses)
 (flame-retardant, glass fiber-reinforced thermoplastic
 polyester compns. free of Br, Cl, As)

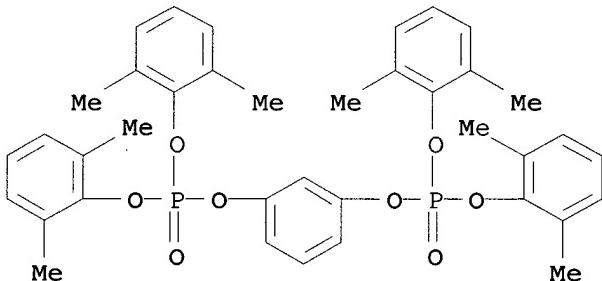
IT 24968-12-5, Poly(butylene terephthalate) 26062-94-2, Poly(butylene
 terephthalate)
 RL: POF (Polymer in formulation); PRP (Properties); TEM (Technical
 or engineered material use); USES (Uses)
 (flame-retardant, glass fiber-reinforced thermoplastic
 polyester compns. free of Br, Cl, As)

IT 25038-59-9, properties
 RL: POF (Polymer in formulation); PRP (Properties); TEM (Technical
 or engineered material use); USES (Uses)
 (flame-retardant, glass fiber-reinforced thermoplastic
 polyester compns. free of Br, Cl, As free of Br, Cl, As)

IT 7723-14-0, Novaexcel 140, uses
 RL: MOA (Modifier or additive use); USES (Uses)
 (red; flame-retardant, glass fiber-reinforced thermoplastic
 polyester compns. free of Br, Cl, As)

IT 139189-30-3, PX 200
 RL: MOA (Modifier or additive use); USES (Uses)
 (flame-retardant, glass fiber-reinforced thermoplastic
 polyester compns. free of Br, Cl, As)

RN 139189-30-3 HCPLUS
 CN Phosphoric acid, 1,3-phenylene tetrakis(2,6-dimethylphenyl) ester
 (9CI) (CA INDEX NAME)

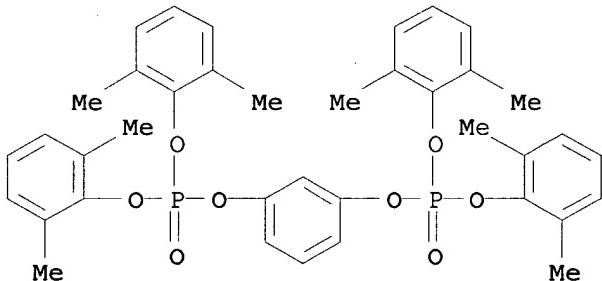


L50 ANSWER 31 OF 35 HCPLUS COPYRIGHT 2005 ACS on STN
 AN 1999:698161 HCPLUS
 DN 131:323389
 TI Halogen-free vinyl ester resin compositions with
 excellent fire resistance and their cured products
 IN Okumura, Hiroya; Uchida, Toshiaki; Inoue, Tomoko; Takeuchi, Hiroshi;
 Fujii, Tatsuo; Shiraki, Hiroyuki
 PA Takeda Chemical Industries, Ltd., Japan
 SO Jpn. Kokai Tokkyo Koho, 8 pp.
 CODEN: JKXXAF
 DT Patent
 LA Japanese
 FAN.CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
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 PI JP 11302344 A2 19991102 JP 1998-124088
 PRAI JP 1998-124088 19980417
 AB The compns. useful for prepgs and laminates comprise urethane-modified vinyl ester resins (A) or A-polybasic acid anhydride adducts, double bond-contg. monomers, and P-type flame retardants, where A is prep'd. by reaction of epoxy resins bearing ≥ 1.2 epoxy group with unsatd. monobasic acid and/or by reaction of OH-contg. (meth)acrylates with polyisocyanates bearing ≥ 1.5 NCO group at equiv. ratio of NCO/OH 0.01-1.2. Thus, 100 parts of a reaction product of epoxy resin (YD 128) 748, methacrylic acid 344, 2-hydroxyethyl methacrylate 390, TDI 174, HDI trimer 504, and styrene 840 g was mixed with 30 parts tricresyl phosphate and 130 parts Al(OH)₃ (CWL 310) and cured to give a test piece showing good fire resistance.
 IC ICM C08F290-06
 ICS C08G018-67; C08K003-32; C08K005-521; C08L075-16; C08G059-17;
 C08J005-10; C08J005-24
 CC 37-6 (Plastics Manufacture and Processing)
 Section cross-reference(s): 38
 ST flame retardant urethane vinyl ester prepreg; epoxy hydroxymethacrylate polyisocyanate copolymer cresyl phosphate; halogen free vinyl ester resin laminate
 IT Epoxy resins, preparation
 RL: IMF (Industrial manufacture); POF (Polymer in formulation); PRP (Properties); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
 (acrylates, urethane-modified; halogen-free
 urethane-modified vinyl ester resin compns. with good
 fire resistance)
 IT Fillers
 (aluminum hydroxide; halogen-free
 urethane-modified vinyl ester resin compns. with good
 fire resistance)
 IT Polyphosphoric acids
 RL: MOA (Modifier or additive use); USES (Uses)
 (ammonium salts, AP 422, flame retardant;
 halogen-free urethane-modified vinyl ester
 resin compns. with good fire resistance)
 IT Fire-resistant materials
 Laminated materials
 (halogen-free urethane-modified vinyl ester
 resin compns. with good fire resistance)
 IT Rubber, uses
 RL: MOA (Modifier or additive use); USES (Uses)
 (halogen-free urethane-modified vinyl ester
 resin compns. with good fire resistance)
 IT Fireproofing agents
 (phosphorus-type; halogen-free
 urethane-modified vinyl ester resin compns. with good
 fire resistance)
 IT 21645-51-2, Aluminum hydroxide, uses
 RL: MOA (Modifier or additive use); USES (Uses)
 (CWL 310, filler; halogen-free)

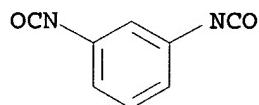
- urethane-modified vinyl ester resin compns. with good
fire resistance)
- IT 1330-78-5, Tricresyl phosphate 139189-30-3, PX 200
RL: MOA (Modifier or additive use); USES (Uses)
(flame retardant; halogen-free
urethane-modified vinyl ester resin compns. with good
fire resistance)
- IT 248255-46-1P, HDI trimer-2-hydroxyethyl methacrylate-styrene-
TDI-YD 128 methacrylate copolymer 248255-47-2P
RL: IMF (Industrial manufacture); POF (Polymer in formulation); PRP
(Properties); TEM (Technical or engineered material use); PREP
(Preparation); USES (Uses)
(halogen-free urethane-modified vinyl ester
resin compns. with good fire resistance)
- IT 139189-30-3, PX 200
RL: MOA (Modifier or additive use); USES (Uses)
(flame retardant; halogen-free
urethane-modified vinyl ester resin compns. with good
fire resistance)
- RN 139189-30-3 HCAPLUS
- CN Phosphoric acid, 1,3-phenylene tetrakis(2,6-dimethylphenyl) ester
(9CI) (CA INDEX NAME)



- IT 248255-46-1P, HDI trimer-2-hydroxyethyl methacrylate-styrene-
TDI-YD 128 methacrylate copolymer 248255-47-2P
RL: IMF (Industrial manufacture); POF (Polymer in formulation); PRP
(Properties); TEM (Technical or engineered material use); PREP
(Preparation); USES (Uses)
(halogen-free urethane-modified vinyl ester
resin compns. with good fire resistance)
- RN 248255-46-1 HCAPLUS
- CN 2-Propenoic acid, 2-methyl-, 2-hydroxyethyl ester, polymer with
(chloromethyl)oxirane polymer with 4,4'-(1-
methylmethylenedibenzylidene)bis[phenol] 2-methyl-2-propenoate,
1,6-diisocyanatohexane trimer, 1,3-diisocyanatomethylbenzene and
ethenylbenzene (9CI) (CA INDEX NAME)

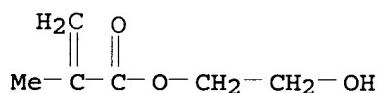
CM 1

CRN 26471-62-5
CMF C9 H6 N2 O2
CCI IDS

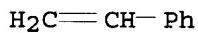


D1-Me

CM 2

CRN 868-77-9
CMF C6 H10 O3

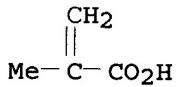
CM 3

CRN 100-42-5
CMF C8 H8

CM 4

CRN 61970-25-0
CMF (C15 H16 O2 . C3 H5 Cl O)x . x C4 H6 O2

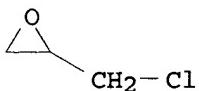
CM 5

CRN 79-41-4
CMF C4 H6 O2

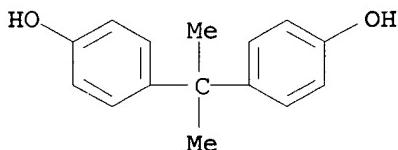
CM 6

CRN 25068-38-6
CMF (C15 H16 O2 . C3 H5 Cl O)x
CCI PMS

CM 7

CRN 106-89-8
CMF C3 H5 Cl O

CM 8

CRN 80-05-7
CMF C15 H16 O2

CM 9

CRN 28574-90-5
CMF (C₈ H₁₂ N₂ O₂)₃
CCI PMS

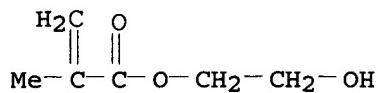
CM 10

CRN 822-06-0
CMF C₈ H₁₂ N₂ O₂OCN-(CH₂)₆-NCO

RN 248255-47-2 HCPLUS
 CN 2-Propenoic acid, 2-methyl-, 2-hydroxyethyl ester, polymer with (chloromethyl)oxirane polymer with 4,4'-(1-methylethylidene)bis[phenol] 2-propenoate, 1,3-diisocyanatomethylbenzene trimer, ethenylbenzene, 1,1'-methylenebis[4-isocyanatobenzene] and 3a,4,7,7a-tetrahydro-1,3-isobenzofurandione (9CI) (CA INDEX NAME)

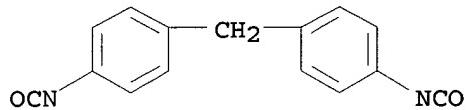
CM 1

CRN 868-77-9
CMF C₆ H₁₀ O₃



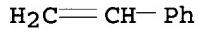
CM 2

CRN 101-68-8
 CMF C15 H10 N2 O2



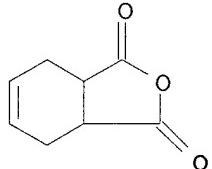
CM 3

CRN 100-42-5
 CMF C8 H8



CM 4

CRN 85-43-8
 CMF C8 H8 O3

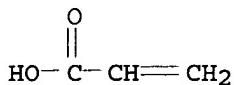


CM 5

CRN 55818-57-0
 CMF (C15 H16 O2 . C3 H5 Cl O)x . x C3 H4 O2

CM 6

CRN 79-10-7
 CMF C3 H4 O2

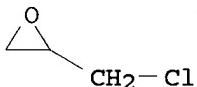


CM 7

CRN 25068-38-6
 CMF (C15 H16 O2 . C3 H5 Cl O)x
 CCI PMS

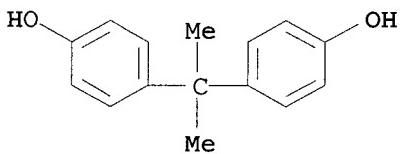
CM 8

CRN 106-89-8
 CMF C3 H5 Cl O



CM 9

CRN 80-05-7
 CMF C15 H16 O2

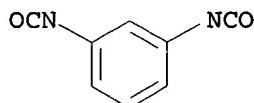


CM 10

CRN 9019-85-6
 CMF (C9 H6 N2 O2)3
 CCI PMS

CM 11

CRN 26471-62-5
 CMF C9 H6 N2 O2
 CCI IDS



D1-Me

L50 ANSWER 32 OF 35 HCAPLUS COPYRIGHT 2005 ACS on STN
 AN 1998:71610 HCAPLUS
 DN 128:154554
 TI **Flame-retardant and hydrolysis-resistant phosphorus-containing polyesters, resin compositions, and their moldings**
 IN Yamauchi, Koji; Matsuoka, Hideo; Inoue, Toshihide
 PA Toray Industries, Inc., Japan
 SO Jpn. Kokai Tokkyo Koho, 25 pp.
 CODEN: JKXXAF
 DT Patent
 LA Japanese
 FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 10025338	A2	19980127	JP 1996-180923	199607 10
PRAI	JP 3557792	B2	20040825		
	JP 1996-180923		19960710		
AB	Polyesters with Mn \geq 500 have (a) repeating units of COArCO (x mol%) and OR1O (y mol%) and (b) \geq 1 P-contg. units selected from COCHR2CH2POR3CH2CHR2CO (z1 mol%) and OCH2CHR4CH2POR5CH2CHR4CH2O (z2 mol%) [R1 = halogen-free divalent org. group; Ar = (C1-12 alkyl, cycloalkyl, aralkyl, aryl-substituted) halogen-free divalent arom. group; R2-R5 = (C1-12 alkyl, Ph, cycloalkyl, aralkyl, aryl-substituted) halogen-free monovalent org. group; x + y + z1 + z2 = 100 mol%; x + z1 = y + z2]. Moldings for elec. or electronic parts, automobile parts, or mech. parts are prep'd. from the polyesters. or the compns. contg. the polyesters. Thus, di-Me terephthalate and ethylene glycol were trans-esterified in the presence of Sb2O3 and then polycondensed with 4.0 mol% sec-butylbis(3-hydroxypropyl)phosphine oxide (prep'd. from 2-butene, PH3, and allyl alc.) to give a title polymer, which was mixed with melamine (fireproofing and hydrolysis improving agents) and melt-extruded to give a test piece showing flame retardance V-1 and good hydrolysis resistance.				
IC	ICM C08G063-692				
	ICS C08K005-3492; C08L067-02				
CC	35-5 (Chemistry of Synthetic High Polymers) Section cross-reference(s): 37, 76				
ST	flame hydrolysis resistant phosphorus contg polyester;				

terephthalate ethylene glycol phosphine oxide copolymer; elec
electronic automobile mech device; melamine **fireproofing**
hydrolysis improving agent

IT Fluoropolymers, uses
Glass fibers, uses
RL: MOA (Modifier or additive use); USES (Uses)
(**flame-retardant agents; flame-retardant and**
hydrolysis-resistant P-contg. polyesters compns. contg.)

IT Electric apparatus
(**flame-retardant and hydrolysis-resistant P-contg.**
polyesters for moldings of)

IT Fireproofing agents
(**halogen-free; flame-retardant and**
hydrolysis-resistant P-contg. polyesters compns. contg.)

IT Antioxidants
(hindered phenols; **flame-retardant and**
hydrolysis-resistant P-contg. polyesters compns. contg.)

IT Automobiles
(parts; **flame-retardant and hydrolysis-resistant**
P-contg. polyesters for moldings of)

IT Fire-resistant materials
(phosphorous-contg. polyesters; **flame-retardant and**
hydrolysis-resistant P-contg. polyesters)

IT Polyesters, preparation
RL: IMF (Industrial manufacture); POF (Polymer in formulation); PRP
(Properties); TEM (Technical or engineered material use); PREP
(Preparation); USES (Uses)
(phosphorus-contg.; **flame-retardant and**
hydrolysis-resistant P-contg. polyesters)

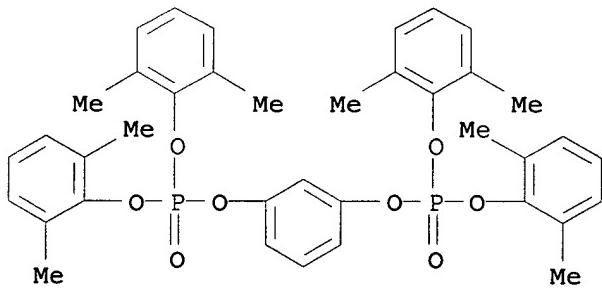
IT Phenolic resins, uses
Phenoxy resins
Plastics, uses
Polyamides, uses
Polycarbonates, uses
Polythiophenylenes
RL: MOA (Modifier or additive use); USES (Uses)
(thermoplastics, **flame-retardant and hydrolysis**
improving agents; flame-retardant and
hydrolysis-resistant P-contg. polyesters compns. contg.)

IT 6683-19-8, Pentaerythrityl tetrakis[3-(3,5-di-tert-butyl-4-hydroxyphenyl)propionate]
RL: MOA (Modifier or additive use); USES (Uses)
(Irganox 1010, antioxidants; **flame-retardant and**
hydrolysis-resistant P-contg. polyesters compns. contg.)

IT 115-86-6, Triphenoxyphosphine oxide 9002-84-0, Teflon
139189-30-3
RL: MOA (Modifier or additive use); USES (Uses)
(**flame-retardant agents; flame-retardant and**
hydrolysis-resistant P-contg. polyesters compns. contg.)

IT 91-76-9, Benzoguanamine 108-78-1, Melamine, uses 108-80-5,
Cyanuric acid 108-80-5D, Isocyanuric acid, salts 12654-97-6D,
Triazine, compds.
RL: MOA (Modifier or additive use); USES (Uses)
(**flame-retardant and hydrolysis improving agents;**
flame-retardant and hydrolysis-resistant P-contg.
polyesters compns. contg.)

- IT 149611-02-9P 202346-34-7P 202346-35-8P
 202346-36-9P 202346-37-0P 202346-38-1P
 RL: IMF (Industrial manufacture); POF (Polymer in formulation); PRP (Properties); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
 (flame-retardant and hydrolysis-resistant P-contg.
 polyesters of)
- IT 79579-99-0P, sec-Butylbis(3-hydroxypropyl)phosphine oxide
 RL: IMF (Industrial manufacture); RCT (Reactant); PREP (Preparation); RACT (Reactant or reagent)
 (flame-retardant and hydrolysis-resistant P-contg.
 polyesters prep'd. from)
- IT 107-01-7, 2-Butene 107-13-1, Acrylonitrile, reactions 107-18-6,
 Allyl alcohol, reactions 115-11-7, Isobutene, reactions
 638-21-1, Phenyl phosphine 7722-84-1, Hydrogen peroxide, reactions
 7803-51-2, Phosphine
 RL: RCT (Reactant); RACT (Reactant or reagent)
 (flame-retardant and hydrolysis-resistant P-contg.
 polyesters prep'd. from)
- IT 9002-88-4, Polyethylene 9003-07-0, Polypropylene 9003-56-9
 , ABS
 RL: MOA (Modifier or additive use); USES (Uses)
 (thermoplastics, flame-retardant and hydrolysis
 improving agents; flame-retardant and
 hydrolysis-resistant P-contg. polyesters compns. contg.)
- IT 119792-27-7, PR 53194 176365-90-5, Torelina A 670X01
 RL: MOA (Modifier or additive use); USES (Uses)
 (thermoplastics, flame-retardant and
 hydrolysis-resistant agents; flame-retardant and
 hydrolysis-resistant P-contg. polyesters compns. contg.)
- IT 139189-30-3
 RL: MOA (Modifier or additive use); USES (Uses)
 (flame-retardant agents; flame-retardant and
 hydrolysis-resistant P-contg. polyesters compns. contg.)
- RN 139189-30-3 HCAPLUS
- CN Phosphoric acid, 1,3-phenylene tetrakis(2,6-dimethylphenyl) ester
 (9CI) (CA INDEX NAME)



- IT 149611-02-9P 202346-34-7P 202346-35-8P
 202346-36-9P 202346-37-0P 202346-38-1P
 RL: IMF (Industrial manufacture); POF (Polymer in formulation); PRP (Properties); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)

(flame-retardant and hydrolysis-resistant P-contg.
polyesters of)

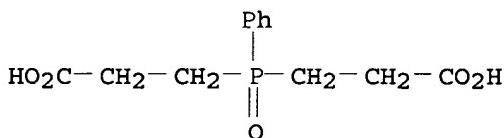
RN 149611-02-9 HCPLUS

CN 1,4-Benzenedicarboxylic acid, dimethyl ester, polymer with
1,2-ethanediol and 3,3'-(phenylphosphinylidene)bis[propanoic acid]
(9CI) (CA INDEX NAME)

CM 1

CRN 6420-84-4

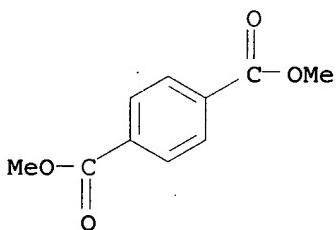
CMF C12 H15 O5 P



CM 2

CRN 120-61-6

CMF C10 H10 O4



CM 3

CRN 107-21-1

CMF C2 H6 O2

HO-CH₂-CH₂-OH

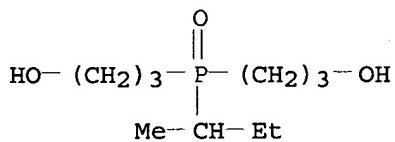
RN 202346-34-7 HCPLUS

CN 1,4-Benzenedicarboxylic acid, dimethyl ester, polymer with
1,2-ethanediol and 3,3'-(1-methylpropyl)phosphinylidene]bis[1-
propanol] (9CI) (CA INDEX NAME)

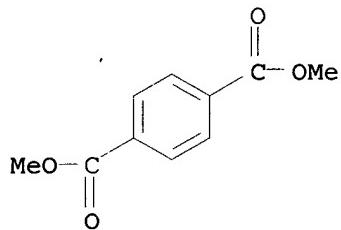
CM 1

CRN 79579-99-0

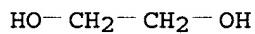
CMF C10 H23 O3 P



CM 2

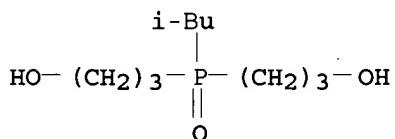
CRN 120-61-6
CMF C10 H10 O4

CM 3

CRN 107-21-1
CMF C2 H6 O2

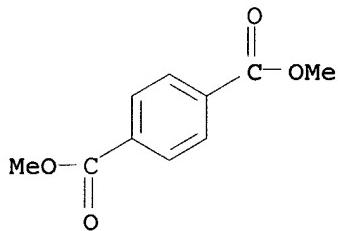
RN 202346-35-8 HCPLUS
 CN 1,4-Benzenedicarboxylic acid, dimethyl ester, polymer with
 1,2-ethanediol and 3,3'-(2-methylpropyl)phosphinylidene]bis[1-
 propanol] (9CI) (CA INDEX NAME)

CM 1

CRN 147768-39-6
CMF C10 H23 O3 P

CM 2

CRN 120-61-6
 CMF C10 H10 O4



CM 3

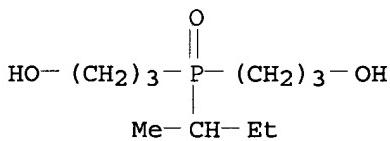
CRN 107-21-1
 CMF C2 H6 O2

HO—CH₂—CH₂—OH

RN 202346-36-9 HCPLUS
 CN 1,4-Benzenedicarboxylic acid, dimethyl ester, polymer with
 1,4-butanediol and 3,3'—[(1-methylpropyl)phosphinylidene]bis[1-
 propanol] (9CI) (CA INDEX NAME)

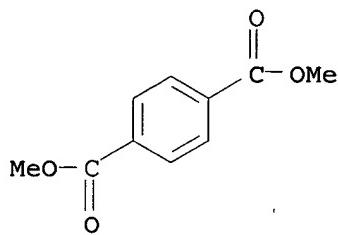
CM 1

CRN 79579-99-0
 CMF C10 H23 O3 P



CM 2

CRN 120-61-6
 CMF C10 H10 O4

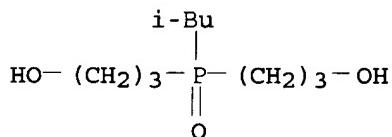


CM 3

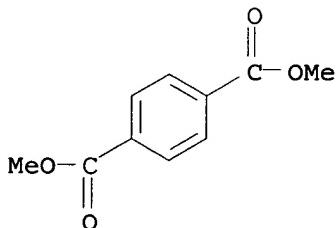
CRN 110-63-4
CMF C4 H10 O2 $\text{HO} - (\text{CH}_2)_4 - \text{OH}$

RN 202346-37-0 HCPLUS
 CN 1,4-Benzenedicarboxylic acid, dimethyl ester, polymer with
 1,4-butanediol and 3,3'-(2-methylpropyl)phosphinylidene]bis[1-
 propanol] (9CI) (CA INDEX NAME)

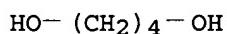
CM 1

CRN 147768-39-6
CMF C10 H23 O3 P

CM 2

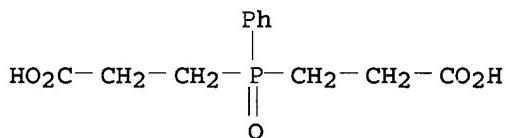
CRN 120-61-6
CMF C10 H10 O4

CM 3

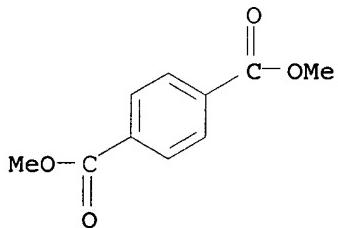
CRN 110-63-4
CMF C4 H10 O2

RN 202346-38-1 HCAPLUS
 CN 1,4-Benzenedicarboxylic acid, dimethyl ester, polymer with
 1,4-butanediol and 3,3'-(phenylphosphinylidene)bis[propanoic acid]
 (9CI) (CA INDEX NAME)

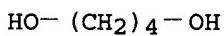
CM 1

CRN 6420-84-4
CMF C12 H15 O5 P

CM 2

CRN 120-61-6
CMF C10 H10 O4

CM 3

CRN 110-63-4
CMF C4 H10 O2

IT 9003-56-9, ABS

RL: MOA (Modifier or additive use); USES (Uses)
 (thermoplastics, flame-retardant and hydrolysis
 improving agents; flame-retardant and
 hydrolysis-resistant P-contg. polyesters compns. contg.)

RN 9003-56-9 HCPLUS

CN 2-Propenenitrile, polymer with 1,3-butadiene and ethenylbenzene
 (9CI) (CA INDEX NAME)

CM 1

CRN 107-13-1

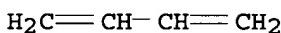
CMF C3 H3 N



CM 2

CRN 106-99-0

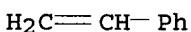
CMF C4 H6



CM 3

CRN 100-42-5

CMF C8 H8



L50 ANSWER 33 OF 35 HCPLUS COPYRIGHT 2005 ACS on STN
 AN 1997:684457 HCPLUS
 DN 127:308086
 TI Flame retardant thermoplastic resin compositions
 IN Matsumoto, Kazuaki; Koyama, Tadashi; Ono, Yoshitaka; Fujita,
 Katsutoyo; Ohara, Yoichi; Hirobe, Kazushi
 PA Kaneka Corp., Japan
 SO PCT Int. Appl., 37 pp.
 CODEN: PIXXD2
 DT Patent
 LA Japanese
 FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	WO 9738051	A1	19971016	WO 1997-JP1140	199704 02

W: CN, JP, US
 RW: AT, BE, CH, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL,
 PT, SE

EP 893475	A1	19990127	EP 1997-914585	
				199704 02
EP 893475	B1	20030730		
R: BE, DE, FR, GB, NL, SE				
CN 1221441	A	19990630	CN 1997-195314	
				199704 02
JP 2000327901	A2	20001128	JP 2000-134687	
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JP 3454515	B2	20031006	JP 1997-536045	
				199704 02
US 2001012865	A1	20010809	US 1998-147114	
				199810 06
US 6329451	B2	20011211		
PRAI JP 1996-112014	A	19960408		
JP 1996-245571	A	19960827		
JP 1996-279655	A	19961022		
JP 1997-536045	A3	19970402		
WO 1997-JP1140	W	19970402		

OS MARPAT 127:308086

AB The compns. which, by virtue of addn. of a very small amt. of stabilized red phosphorus, can simultaneously realize improved heat resistance and chlorine-free and bromine-free **flame retardation** and, in addn., possesses long-term heat stability, reduced emission of foul odor, and other properties. The compn. comprises (A) 50-95 parts a polycarbonate resin, (B) 5-50 parts a thermoplastic polyester resin, (C) 0.1-5 parts (based on 100 parts A and B) a coated, stabilized red phosphorus, and optionally, (D) 0.1-100 parts (based on 100 parts A and B) a silicate compd.

IC ICM C08L069-00
 ICS C08K003-32; C08K003-34; C08K005-52; C08L069-00; C08L067-00;
 C08L027-12; C08L083-04; C08L023-00; C08L051-04

CC 37-6 (Plastics Manufacture and Processing)

ST halogen free **flame retardant**
 thermoplastic blend; polycarbonate polyester blend **flame retardant**; **fireproofing agent** red phosphorus
 thermoplastic; phosphate **fireproofing agent** thermoplastic blend

IT Mica-group minerals, uses
 RL: MOA (Modifier or additive use); USES (Uses)
 (A 21S; **flame retardant** thermoplastic resin compns.
 contg. stabilized red phosphorus)

IT Fluoropolymers, uses
 RL: MOA (Modifier or additive use); USES (Uses)
 (Polyflon FA 500; **flame retardant** thermoplastic resin compns. contg. stabilized red phosphorus)

IT Polycarbonates, properties
 RL: POF (Polymer in formulation); PRP (Properties); USES (Uses)
 (arom.; **flame retardant** thermoplastic resin compns.)

contg. stabilized red phosphorus)

IT Hydroxides (inorganic)
 RL: TEM (Technical or engineered material use); USES (Uses)
 (coatings for red phosphorus; **flame** retardant
 thermoplastic resin compns. contg. stabilized red phosphorus)

IT Fireproofing agents
 (**flame** retardant thermoplastic resin compns. contg.
 stabilized red phosphorus)

IT Polyesters, properties
 RL: POF (Polymer in formulation); PRP (Properties); USES (Uses)
 (**flame** retardant thermoplastic resin compns. contg.
 stabilized red phosphorus)

IT Polymer blends
 RL: PRP (Properties)
 (**flame** retardant thermoplastic resin compns. contg.
 stabilized red phosphorus)

IT Plastics, uses
 RL: TEM (Technical or engineered material use); USES (Uses)
 (thermosetting, coatings for red phosphorus; **flame**
 retardant thermoplastic resin compns. contg. stabilized red
 phosphorus)

IT 9002-84-0, PTFE
 RL: MOA (Modifier or additive use); USES (Uses)
 (Polyflon FA 500; **flame** retardant thermoplastic resin
 compns. contg. stabilized red phosphorus)

IT 21645-51-2, Aluminum hydroxide, uses
 RL: MOA (Modifier or additive use); USES (Uses)
 (coatings for red phosphorus; **flame** retardant
 thermoplastic resin compns. contg. stabilized red phosphorus)

IT 115-86-6, Triphenyl phosphate 57583-54-7, Resorcinol
 bis(diphenyl)phosphate 93981-32-9, Bisphenol A
 bis(dicresyl)phosphate 124784-27-6, Hydroquinone
 bis(di-2,6-xylyl)phosphate 139189-30-3, Resorcinol
 bis(di-2,6-xylyl)phosphate
 RL: MOA (Modifier or additive use); USES (Uses)
 (**fireproofing** agent; **flame** retardant
 thermoplastic resin compns. contg. stabilized red phosphorus)

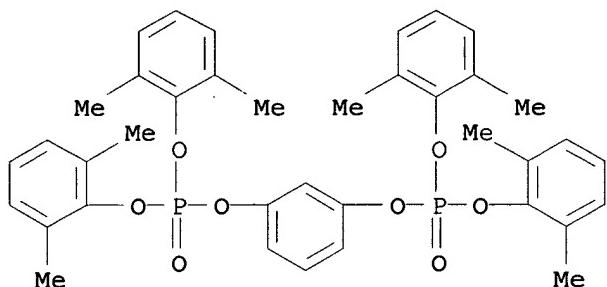
IT 7723-14-0, Red phosphorus, uses 9010-86-0, Evaflex EEA-A
 713 14807-96-6, Micro Ace K-1, uses 107080-92-2, Kaneace
 M 511
 RL: MOA (Modifier or additive use); USES (Uses)
 (**flame** retardant thermoplastic resin compns. contg.
 stabilized red phosphorus)

IT 24968-12-5, Polybutylene terephthalate 25038-59-9,
 PET polyester, properties 26062-94-2, Polybutylene
 terephthalate
 RL: POF (Polymer in formulation); PRP (Properties); USES (Uses)
 (**flame** retardant thermoplastic resin compns. contg.
 stabilized red phosphorus)

IT 139189-30-3, Resorcinol bis(di-2,6-xylyl)phosphate
 RL: MOA (Modifier or additive use); USES (Uses)
 (**fireproofing** agent; **flame** retardant
 thermoplastic resin compns. contg. stabilized red phosphorus)

RN 139189-30-3 HCPLUS

CN Phosphoric acid, 1,3-phenylene tetrakis(2,6-dimethylphenyl) ester
 (9CI) (CA INDEX NAME)



IT 9010-86-0, Evaflex EEA-A 713 107080-92-2, Kaneace

M 511

RL: MOA (Modifier or additive use); USES (Uses)
(flame retardant thermoplastic resin compns. contg.
stabilized red phosphorus)

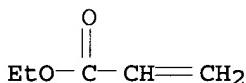
RN 9010-86-0 HCPLUS

CN 2-Propenoic acid, ethyl ester, polymer with ethene (9CI) (CA INDEX NAME)

CM 1

CRN 140-88-5

CMF C5 H8 O2



CM 2

CRN 74-85-1

CMF C2 H4



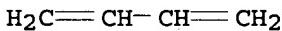
RN 107080-92-2 HCPLUS

CN 2-Propenoic acid, 2-methyl-, methyl ester, polymer with
1,3-butadiene and ethenylbenzene, graft (9CI) (CA INDEX NAME)

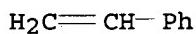
CM 1

CRN 106-99-0

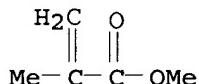
CMF C4 H6



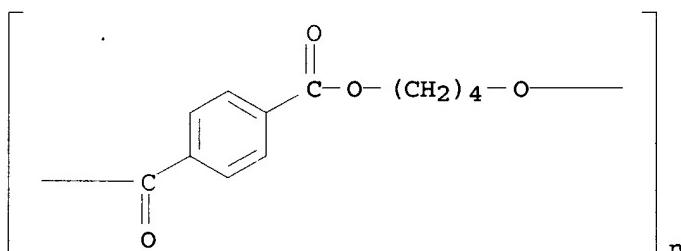
CM 2

CRN 100-42-5
CMF C8 H8

CM 3

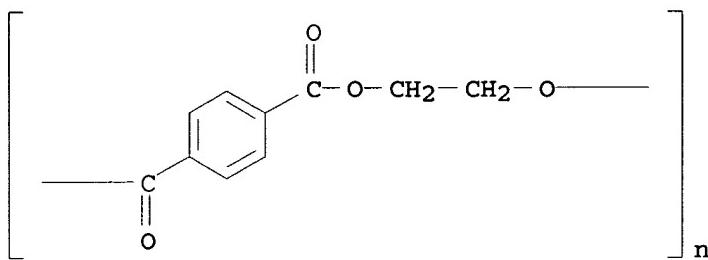
CRN 80-62-6
CMF C5 H8 O2IT 24968-12-5, Polybutylene terephthalate 25038-59-9,
PET polyester, properties 26062-94-2, Polybutylene
terephthalateRL: POF (Polymer in formulation); PRP (Properties); USES (Uses)
(flame retardant thermoplastic resin compns. contg.
stabilized red phosphorus)

RN 24968-12-5 HCPLUS

CN Poly(oxy-1,4-butanediylloxycarbonyl-1,4-phenylenecarbonyl) (9CI) (CA
INDEX NAME)

RN 25038-59-9 HCPLUS

CN Poly(oxy-1,2-ethanediylloxycarbonyl-1,4-phenylenecarbonyl) (9CI) (CA
INDEX NAME)



RN 26062-94-2 HCAPLUS

CN 1,4-Benzenedicarboxylic acid, polymer with 1,4-butanediol (9CI) (CA INDEX NAME)

CM 1

CRN 110-63-4

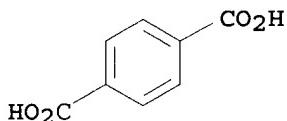
CMF C4 H10 O2

HO-(CH₂)₄-OH

CM 2

CRN 100-21-0

CMF C8 H6 O4



L50 ANSWER 34 OF 35 HCAPLUS COPYRIGHT 2005 ACS on STN

AN 1997:650825 HCAPLUS

DN 127:332312

TI Flame-retardant thermoplastic resin compositions containing polyphosphates with excellent bleeding-out resistance

IN Yamauchi, Koji; Matsuoka, Hideo; Inoue, Toshihide

PA Toray Industries, Inc., Japan

SO Jpn. Kokai Tokkyo Koho, 15 pp.

CODEN: JKXXAF

DT Patent

LA Japanese

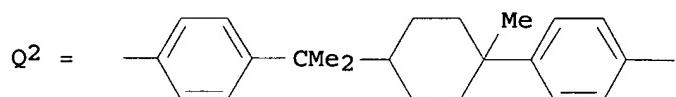
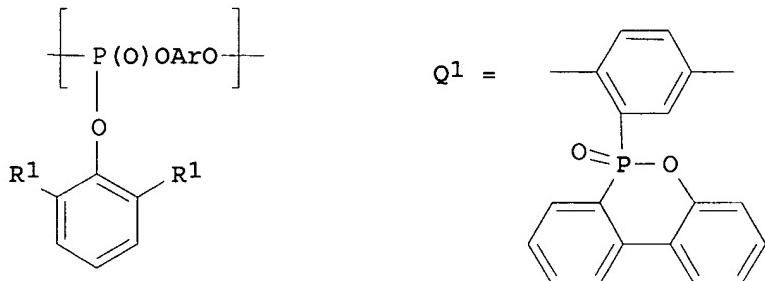
FAN.CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
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PI JP 09255877	A2	19970930	JP 1996-68842	

JP 3555313
PRAI JP 1996-68842
GI

B2 20040818
19960325

199603
25



AB Title compns., useful for automobiles and construction materials, comprise 100 parts thermoplastic resins and 1-100 parts polyphosphates comprising repeating unit I [R1 = H, C1-5 alkyl; Ar = Ph (substituted with **halo-free** org. residues)] and showing polystyrene-converted no.-av. mol. wt. (Mn; by GPC) $\geq 10,000$ and solv. to Me₂CO, CHCl₃, DMF, DMSO, and/or THF ≥ 90 wt.%. The substituents Ar may be p- or m-phenylene, C₆H₄-p-CMe₂C₆H₄, Q1, Q2, or C₆H₄-p-XC₆H₄ (X = single bond, O, S, SO₂, CH₂, CHPh). The compns. may contain 1-100 parts (iso)cyanuric acid salts of triazine compds., 1-50 parts **halogen-free fireproofing** agents, 0.01-10 parts fluoropolymers, 0.01-3 parts hindered phenol-type stabilizers, or 5-140 parts fillers. Thus, 2,6-dimethylphenylphosphoric acid dichloride was polymd. with equimolar hydroquinone at 150-220° in the presence of MgCl₂ to give a polymer, 20 parts of which was blended with 100 parts poly(butylene terephthalate), kneaded, pelletized, and injection-molded to give a specimen showing Izod impact strength 40 j/m, deflection temp. 58°, UL 94 fire resistance rating V2, and less bleeding out of phosphates after 100° + 24 h treatment.

IC ICM C08L085-02
ICS C08L101-00

CC 37-6 (Plastics Manufacture and Processing)

ST polyphosphate thermoplastic resin blend bleeding resistance; phenylphosphoric acid hydroquinone copolymer **fireproofing** agent

IT Polyesters, properties

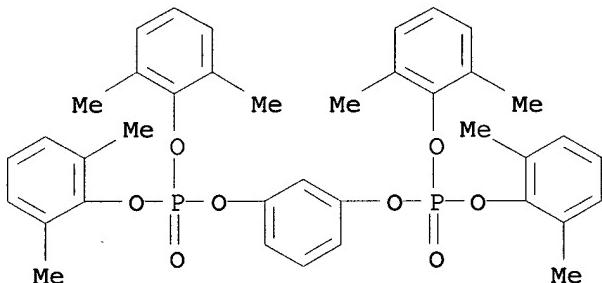
- RL: POF (Polymer in formulation); PRP (Properties); TEM (Technical or engineered material use); USES (Uses)
 (arom.; thermoplastic compns. fireproofed with polyphosphates showing excellent bleeding-out resistance)
- IT Fireproofing agents
 (thermoplastic compns. fireproofed with polyphosphates showing excellent bleeding-out resistance)
- IT Fluoropolymers, properties
 Fluoropolymers, properties
 Polyphosphates
 RL: MOA (Modifier or additive use); PRP (Properties); TEM (Technical or engineered material use); USES (Uses)
 (thermoplastic compns. fireproofed with polyphosphates showing excellent bleeding-out resistance)
- IT Polyamides, properties
 RL: POF (Polymer in formulation); PRP (Properties); TEM (Technical or engineered material use); USES (Uses)
 (thermoplastic compns. fireproofed with polyphosphates showing excellent bleeding-out resistance)
- IT Polycarbonates, properties
 RL: POF (Polymer in formulation); PRP (Properties); TEM (Technical or engineered material use); USES (Uses)
 (thermoplastic compns. fireproofed with polyphosphates showing excellent bleeding-out resistance)
- IT Polyesters, properties
 RL: POF (Polymer in formulation); PRP (Properties); TEM (Technical or engineered material use); USES (Uses)
 (thermoplastic compns. fireproofed with polyphosphates showing excellent bleeding-out resistance)
- IT Polymer blends
 RL: POF (Polymer in formulation); PRP (Properties); TEM (Technical or engineered material use); USES (Uses)
 (thermoplastic compns. fireproofed with polyphosphates showing excellent bleeding-out resistance)
- IT Polyoxyalkylenes, properties
 RL: POF (Polymer in formulation); PRP (Properties); TEM (Technical or engineered material use); USES (Uses)
 (thermoplastic compns. fireproofed with polyphosphates showing excellent bleeding-out resistance)
- IT 91-76-9 115-86-6, Triphenyl phosphate 9002-84-0,
 Polytetrafluoroethylene 37640-57-6, Melamine cyanurate
 139189-30-3 175716-99-1 197661-64-6 197661-65-7
 197661-66-8
 RL: MOA (Modifier or additive use); PRP (Properties); TEM (Technical or engineered material use); USES (Uses)
 (thermoplastic compns. fireproofed with polyphosphates showing excellent bleeding-out resistance)
- IT 9003-56-9, ABS resin 24968-12-5, Polybutylene
 terephthalate 25038-54-4, Nylon 6, properties 25038-59-9
 , Polyethylene terephthalate, properties 25322-69-4,
 Poly(propylene oxide) 26062-94-2, Polybutylene
 terephthalate 32131-17-2, Nylon 66, properties
 RL: POF (Polymer in formulation); PRP (Properties); TEM (Technical or engineered material use); USES (Uses)
 (thermoplastic compns. fireproofed with polyphosphates showing excellent bleeding-out resistance)

IT 139189-30-3

RL: MOA (Modifier or additive use); PRP (Properties); TEM (Technical or engineered material use); USES (Uses)
 (thermoplastic compns. fireproofed with polyphosphates showing excellent bleeding-out resistance)

RN 139189-30-3 HCPLUS

CN Phosphoric acid, 1,3-phenylene tetrakis(2,6-dimethylphenyl) ester
 (9CI) (CA INDEX NAME)



IT 9003-56-9, ABS resin 24968-12-5, Polybutylene terephthalate 25038-59-9, Polyethylene terephthalate, properties 26062-94-2, Polybutylene terephthalate

RL: POF (Polymer in formulation); PRP (Properties); TEM (Technical or engineered material use); USES (Uses)
 (thermoplastic compns. fireproofed with polyphosphates showing excellent bleeding-out resistance)

RN 9003-56-9 HCPLUS

CN 2-Propenenitrile, polymer with 1,3-butadiene and ethenylbenzene
 (9CI) (CA INDEX NAME)

CM 1

CRN 107-13-1

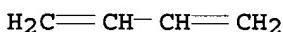
CMF C3 H3 N



CM 2

CRN 106-99-0

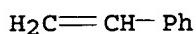
CMF C4 H6



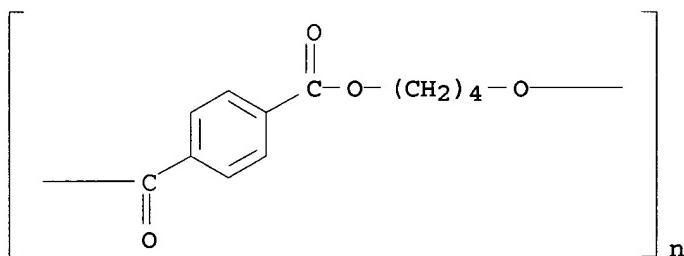
CM 3

CRN 100-42-5

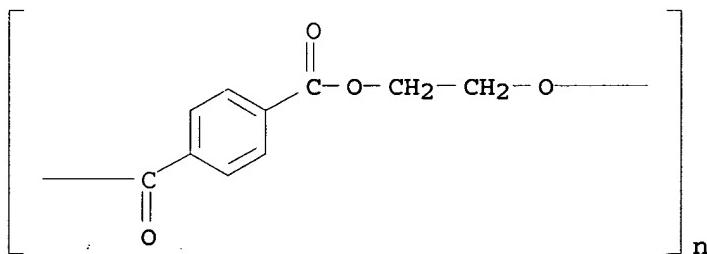
CMF C8 H8



RN 24968-12-5 HCAPLUS
 CN Poly(oxy-1,4-butanediylloxycarbonyl-1,4-phenylene carbonyl) (9CI) (CA
 INDEX NAME)



RN 25038-59-9 HCAPLUS
 CN Poly(oxy-1,2-ethanediylloxycarbonyl-1,4-phenylene carbonyl) (9CI) (CA
 INDEX NAME)



RN 26062-94-2 HCAPLUS
 CN 1,4-Benzenediarboxylic acid, polymer with 1,4-butanediol (9CI) (CA
 INDEX NAME)

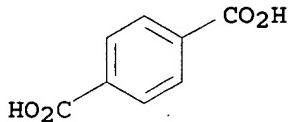
CM 1

CRN 110-63-4
 CMF C4 H10 O2



CM 2

CRN 100-21-0
 CMF C8 H6 O4



L50 ANSWER 35 OF 35 HCAPLUS COPYRIGHT 2005 ACS on STN
 AN 1997:80514 HCAPLUS
 DN 126:90234
 TI Halogen-free flame-retardant resin
 composition with good impact, chem., discoloration, silver
 streaking, and heat resistance and moldability
 IN Koyama, Tadashi; Mogami, Kenji; Asada, Masahiro
 PA Kanegafuchi Kagaku Kogyo Kabushiki Kaisha, Japan
 SO PCT Int. Appl., 38 pp.
 CODEN: PIXXD2

DT Patent
 LA Japanese

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	WO 9637555	A1	19961128	WO 1996-JP1376	199605 24
JP	08319406	A2	19961203	JP 1995-152715	199505 26
EP	829517	A1	19980318	EP 1996-914417	199605 24
EP	829517	B1	20001018		
	R: BE, DE, FR, GB, NL, SE				
US	5871570	A	19990216	US 1997-952652	199711 24

PRAI JP 1995-152715 A 19950526
 WO 1996-JP1376 W 19960524

AB The title compn. comprises 100 parts resin comprising (A) a polycarbonate having a viscosity-av. mol. wt. 16000-29000 and (B) poly(alkylene terephthalate) in wt. ratio 75/25 to 90/10, (C) 1-10 parts copolymer comprising a rubbery polymer and ≥1 one monomer selected from arom. vinyl monomers, vinyl cyanate monomers, (meth)acrylic acid, (meth)acrylic esters, and maleimide monomers, (D) 2-10 parts organophosphorus flame retardants, (E) 0.05-2 parts fluororesins and (F) 0.01-10 parts halogen-free epoxy compds. An injection-moldable compn. comprised bisphenol A polycarbonate 82.5, PET 17.5, butadiene-Me methacrylate copolymer 5, ADK Stab PFR 4.5, ADK Stab EP-22 0.6, PTFE 0.6,

bis(2,6-di-tert-butyl-4-methylphenyl) pentaerythritol diphosphite
 0.5, and pentaerythritol tetrakis(3,5-di-tert-butyl-4-hydroxyhydrocinnamate) 0.2 part.

IC ICM C08L069-00
 ICS C08K005-521; C08K005-15

CC 37-6 (Plastics Manufacture and Processing)

ST polycarbonate polyester blend **fireproof**; butadiene methacrylate copolymer polycarbonate blend **fireproof**; phosphorus compd fire retardant polycarbonate; fluoropolymer polycarbonate blend **fireproof**; epoxy compd polycarbonate blend **fireproof**

IT **Fireproofing agents**
 (halogen-free flame-retardant resin
 compn. with good impact, chem., discoloration, silver streaking, and heat resistance and moldability)

IT Epoxy resins, properties
 Fluoropolymers, properties
 Polycarbonates, properties
 Polyesters, properties
 RL: POF (Polymer in formulation); PRP (Properties); TEM (Technical or engineered material use); USES (Uses)
 (halogen-free flame-retardant resin
 compn. with good impact, chem., discoloration, silver streaking, and heat resistance and moldability)

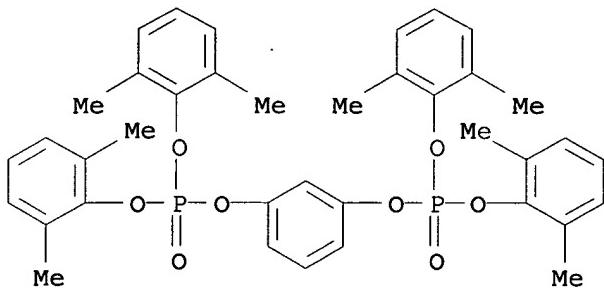
IT Plastics, properties
 RL: POF (Polymer in formulation); PRP (Properties); TEM (Technical or engineered material use); USES (Uses)
 (thermoplastics; halogen-free flame-retardant resin
 compn. with good impact, chem., discoloration, silver streaking, and heat resistance and moldability)

IT 25085-99-8 26444-49-5, Cresyl diphenyl phosphate 57583-54-7, ADK Stab PFR 93981-32-9, Phosflex 580 124784-27-6
139189-30-3, Resorcinol bis(di-2,6-xylyl) phosphate
 RL: MOA (Modifier or additive use); USES (Uses)
 (halogen-free flame-retardant resin
 compn. with good impact, chem., discoloration, silver streaking, and heat resistance and moldability)

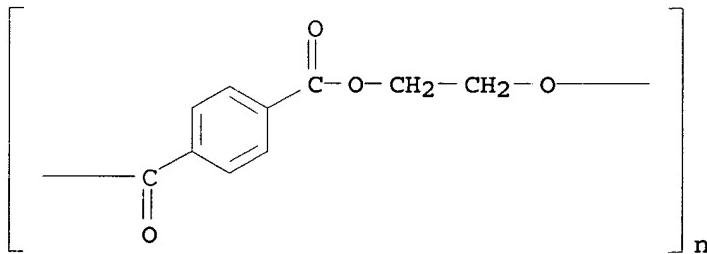
IT 3101-60-8, Denacol EX 146 9002-84-0, PTFE 24936-68-3, Bisphenol A polycarbonate, properties 25037-45-0 25038-59-9, properties 25053-09-2, MBS resin 25068-38-6
25232-40-0, Butadiene-methyl methacrylate copolymer 30973-88-7, Denacol EX 411
 RL: POF (Polymer in formulation); PRP (Properties); TEM (Technical or engineered material use); USES (Uses)
 (halogen-free flame-retardant resin
 compn. with good impact, chem., discoloration, silver streaking, and heat resistance and moldability)

IT **139189-30-3**, Resorcinol bis(di-2,6-xylyl) phosphate
 RL: MOA (Modifier or additive use); USES (Uses)
 (halogen-free flame-retardant resin
 compn. with good impact, chem., discoloration, silver streaking, and heat resistance and moldability)

RN 139189-30-3 HCPLUS
 CN Phosphoric acid, 1,3-phenylene tetrakis(2,6-dimethylphenyl) ester (9CI) (CA INDEX NAME)



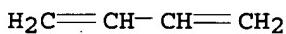
IT 25038-59-9, properties 25053-09-2, MBS resin
 25232-40-0, Butadiene-methyl methacrylate copolymer
 RL: POF (Polymer in formulation); PRP (Properties); TEM (Technical or engineered material use); USES (Uses)
 (halogen-free flame-retardant resin
 compn. with good impact, chem., discoloration, silver streaking, and heat resistance and moldability)
 RN 25038-59-9 HCAPLUS
 CN Poly(oxy-1,2-ethanediylloxycarbonyl-1,4-phenylene carbonyl) (9CI) (CA INDEX NAME)



RN 25053-09-2 HCAPLUS
 CN 2-Propenoic acid, 2-methyl-, methyl ester, polymer with 1,3-butadiene and ethenylbenzene (9CI) (CA INDEX NAME)

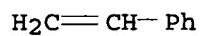
CM 1

CRN 106-99-0
 CMF C4 H6



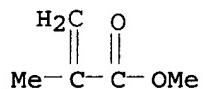
CM 2

CRN 100-42-5
 CMF C8 H8



CM 3

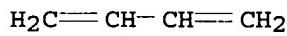
CRN 80-62-6
 CMF C5 H8 O2



RN 25232-40-0 HCPLUS
 CN 2-Propenoic acid, 2-methyl-, methyl ester, polymer with
 1,3-butadiene (9CI) (CA INDEX NAME)

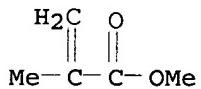
CM 1

CRN 106-99-0
 CMF C4 H6



CM 2

CRN 80-62-6
 CMF C5 H8 O2



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FILE 'HCAPLUS' ENTERED AT 11:24:36 ON 03 OCT 2005
L1 1 S US20040149404/PN
 SEL RN

FILE 'REGISTRY' ENTERED AT 11:25:06 ON 03 OCT 2005
L2 5 S E1-E5

FILE 'WPIX' ENTERED AT 12:11:10 ON 03 OCT 2005
L3 1 S L1

FILE 'HCAPLUS' ENTERED AT 12:19:38 ON 03 OCT 2005
L4 1581195 S VALV? OR GATE? OR APERTUR? OR CHANNEL? OR HOLE? OR EX
L5 38364 S (LIQUOR? OR LIQUID? OR FILTRAT? OR PLANT? OR PULP? OR
L6 7323 S L4 AND L5
L7 6010 S L4(L)L5
L8 1592 S ((PRESSUR? OR FLOW?) (A)CONTROL? OR PC OR FC) (2A)VALV?
L9 37 S L7 AND L8
L10 4 S L9 AND FEED?
L11 0 S L9 AND PAPER?/SC
L12 12049 S (PLANT? OR PULP? OR WOOD? OR CELLULOS?) (2A) (EFFLUENT?
L13 441 S L4(L)L12
L14 0 S L13 AND L8
L15 0 S L13 AND L1
L16 0 S L12 AND L8
L17 39 S L13 AND PAPER?/SC
L18 1592 S L4(L)L8
L19 4 S L18 AND CELLULOS?/SC
L20 4 S L18 AND CELLULOS?/SC,SX
L21 0 S L9 AND CELLULOS?/SC,SX
L22 9 S L17 AND (DEVICE? OR APPARATUS?)
L23 13 S L11 OR L14 OR L15 OR L16 OR L19 OR L20 OR L21 OR L22
L24 0 S L18 AND L12
L25 41 S L18 AND L5
L26 0 S L25 AND CELLULOS?/SC
L27 13 S L23 OR L24 OR L26